

PART A
IONOSPHERIC DATA

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IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: f_oF2 minus f_oF1 is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of f_oF2 (and f_oE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of $h'F2$ (and $h'E$ near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For f_oF2 , as equal to or less than f_oF1 .
2. For $h'F2$, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer or sporadic E, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful.

3. For all layers, if more than half of the data used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

- a. Differences in scaling records when spread echoes are present.
- b. Omission of values when f_oF_2 is less than or equal to f_oF_1 , leading to erroneously high values of monthly averages or median values.
- c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of f_oE . Blank spaces at the beginning and end of columns of $h'F_1$, f_oF_1 , $h'E$, and f_oE are usually the result of diurnal variation in these characteristics. Complete absence of medians of $h'F_1$ and f_oF_1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947
December		150	42	11	15	33	53	86	108	114	126
November		147	35	10	16	38	52	87	112	115	124
October		135	31	10	17	43	52	90	114	116	119
September		119	30	8	18	46	54	91	115	117	121
August		105	27	8	18	49	57	96	111	123	122
July		95	22	8	20	51	60	101	108	125	116
June	150*	89	18	9	21	52	63	103	108	129	112
May	150*	77	16	10	22	52	68	102	108	130	109
April	150*	68	13	10	24	52	74	101	109	133	107
March	150*	60	14	11	27	52	78	103	111	133	105
February	150*	53	14	12	29	51	82	103	113	133	90
January	150*	48	12	14	30	53	85	105	112	130	88

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	72	80
1956	88	97	108	119	128	137						

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the
Commonwealth Observatory:
Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University,
Taipeh, Formosa, China:
Formosa, China

French National Center for Telecommunications Studies:
Tananarive, Madagascar

National Laboratory of Radio-Electricity (French Ionospheric Bu-
reau):
Casablanca, Morocco
Poitiers, France

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover,
Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Indian Council of Scientific and Industrial Research, Radio Re-
search Committee, New Delhi, India:
Ahmedabad (Physical Research Laboratory)
Bombay (All India Radio)

Calcutta (Institute of Radio Physics and Electronics)
Delhi (All India Radio)
Madras (All India Radio)
Tiruchy (All India Radio)
Kodaikanal (India Meteorological Department)

Ministry of Postal Services, Radio Research Laboratories,
Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Upsala, Sweden

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey

National Bureau of Standards (Central Radio Propagation
Laboratory):
Anchorage, Alaska
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 61 through 71 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
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The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

ERRATUM

CRPL-F142(A), p. 55, fig. 101 and

CRPL-F149(A), p. 55, fig. 95: Ignore the prediction curves of foF2 for Kodaikanal, India. These were incorrectly drawn.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
ADAK, ALASKA; NOV. 21, 1956

The following ionograms were obtained at the U.S. Signal Corps, Adak, Alaska vertical sounding station. They are typical of day and night conditions for November at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page.

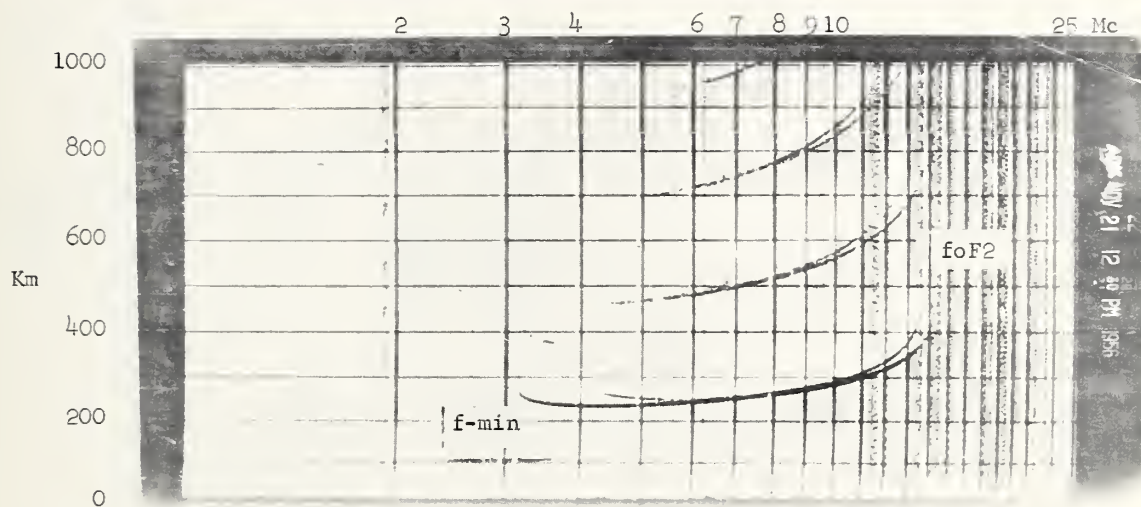


Fig. A. Adak, Alaska, Nov. 21, 1956, 1230 hours, 150°W time.

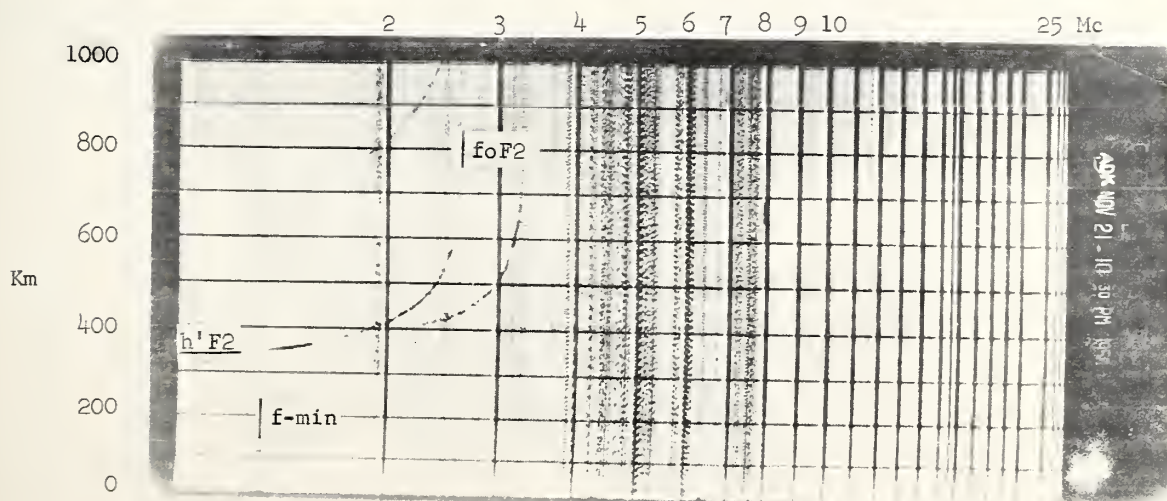
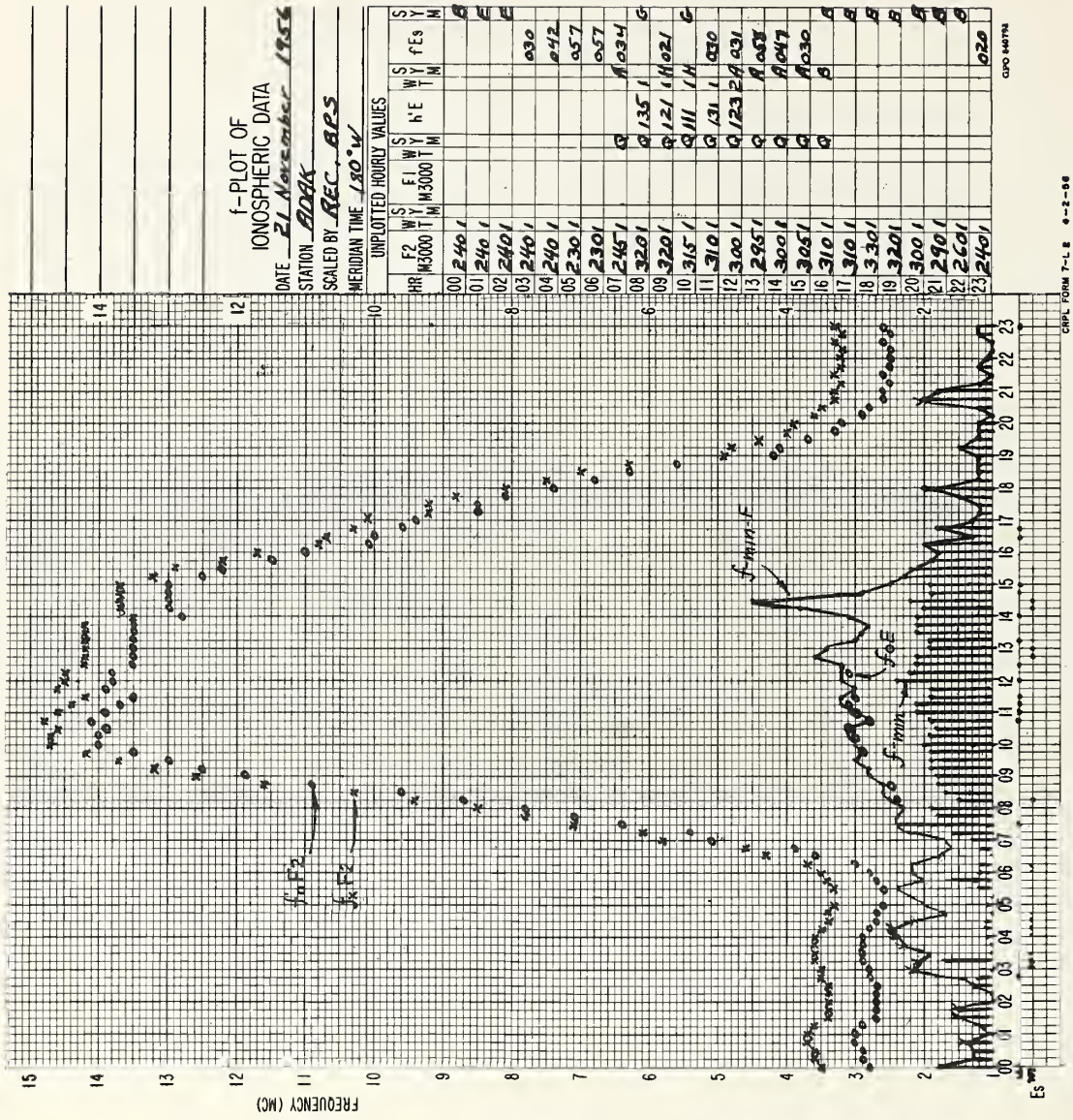


Fig. B. Adak, Alaska, Nov. 21, 1956, 2230 hours, 180°W time.



f-PLOT

TABLES OF IONOSPHERIC DATA

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Table 1

Washington, D. C. (38.7°N, 77.1°W)							
December 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	5.6					3.0 2.80
01	260	5.4					(3.9) 2.80
02	270	5.4					(4.4) 2.80
03	270	5.2					(4.0) 2.80
04	260	5.1					3.6 2.80
05	250	4.7					(3.4) 2.85
06	260	4.7					3.1 2.90
07	250	5.8					4.0 2.95
08	230	9.2	---	---	121	2.2	3.20
09	230	11.7	225	---	110	2.9	3.20
10	240	12.7	225	---	111	3.2	3.10
11	240	13.2	230	---	109	3.4	3.00
12	(250)	13.4	225	---	109	3.5	2.90
13	(250)	13.3	230	---	109	3.4	2.85
14	(250)	13.0	230	---	111	3.2	2.80
15	(240)	12.7	230	---	111	2.9	2.80
16	240	12.2	230	---	119	2.3	2.85
17	230	11.6	---	---			2.85
18	230	10.4					3.5 2.90
19	230	9.2					3.4 2.95
20	230	7.8					3.6 3.00
21	240	7.0					3.3 2.90
22	250	6.3					(3.1) 2.85
23	260	5.8					2.8 2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Oslo, Norway (60.0°N, 11.1°E)							
November 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	310	4.50					1.4 2.45
01	325	3.60					2.3 2.40
02	310	3.55					1.4 2.40
03	300	4.10					2.50
04	300	4.10					2.55
05	280	4.00					2.55
06	255	3.65					2.65
07	250	4.40					2.60
08	250	5.85					2.70
09	240	8.45	---	---	130	2.20	2.90
10	240	10.90	250	---	120	2.65	3.00
11	240	12.60	250	---	120	2.80	3.00
12	240	13.80	245	---	120	2.85	3.00
13	235	13.90	250	---	115	2.85	3.00
14	235	13.70	245	---	130	2.60	3.00
15	235	13.00	245	---	150	2.25	2.95
16	230	>12.00	---	---	---	---	2.95
17	230	10.60					2.90
18	230	8.90					2.95
19	230	6.65					2.70
20	250	5.25					2.70
21	260	5.00					2.50
22	295	4.10					2.45
23	325	3.75					2.40

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Upsala, Sweden (59.8°N, 17.6°E)							
November 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	340	3.8					3.5 2.7
01	340	3.8					3.1 2.6
02	330	3.6					2.8 2.7
03	315	3.8					3.0 2.7
04	300	4.0					2.7 2.75
05	270	4.2					2.6 2.75
06	260	4.1					2.4 2.7
07	250	5.0					E 2.9
08	240	6.6			125	1.80	2.3 3.0
09	235	9.3			115	2.20	2.6 3.0
10	235	12.2	---	---	110	2.55	3.0
11	235	13.4	---	---	110	2.70	3.0
12	230	14.1	---	---	110	2.70	2.9
13	230	14.4			115	2.65	3.0
14	225	14.0			125	2.35	3.0
15	225	13.2			---	1.90	2.2 3.0
16	225	11.8			---	E	2.8 2.95
17	220	9.3			---	E	2.4 3.0
18	225	7.8					1.6 3.0
19	240	6.1					2.4 2.9
20	275	4.7					2.8
21	300	4.3					2.0 2.7
22	305	4.3					2.3 2.7
23	325	3.8					2.9 2.65

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 4

Graz, Austria (47.1°N, 15.5°E)							
November 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	340	5.8					
01	330	4.9					
02	380	4.8					
03	360	4.9					
04	310	4.6					
05	290	4.3					
06	---	4.0					
07	260	7.0					
08	230	9.4					
09	235	0					
10	240	0					
11	245	0					
12	250	0					
13	240	0					
14	250	0					
15	240	0					
16	240	0					
17	240	0					
18	250	9.0					
19	250	7.9					
20	260	6.6					
21	300	6.1					
22	310	6.0					
23	325	5.3					

Time: 15.0°E.
Sweep: 2.5 Mc to 11.0 Mc in 2 minutes.

Table 5

Ft. Monmouth, New Jersey (40.3°N, 74.1°W)							
November 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	6.8					2.80
01	260	6.4					(3.2) 2.75
02	270	6.3					(2.0) 2.70
03	270	6.0					2.70
04	270	5.6					2.7 2.75
05	270	5.3					3.7 2.75
06	250	5.4					(3.2) 2.80
07	240	7.7	235	---	111	---	3.10
08	230	10.8	230	---	118	2.7	3.15
09	230	12.2	225	---	113	3.1	3.10
10	240	13.5	220	---	113	3.5	3.00
11	230	14.0	225	---	115	3.6	2.95
12	240	13.9	225	---	114	3.6	2.85
13	(240)	13.7	225	---	113	3.5	2.85
14	(240)	13.5	230	---	115	3.3	2.80
15	230	13.2	230	---	117	3.0	2.85
16	230	12.6	230	---	119	---	2.85
17	230	12.0					2.85
18	230	10.6					2.2 2.85
19	240	9.4					2.5 2.85
20	240	8.6					(3.6) 2.85
21	250	7.8					(1.8) 2.80
22	250	7.4					(2.2) 2.85
23	250	7.0					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Formosa, China (25.0°N, 121.5°E)							
November 1956							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	240	12.1					2.9
01	240	10.6					(2.7) 2.9
02	240	9.8					(2.3) 2.8
03	250 (10.2)						(2.2) (2.9)
04	240 (9.6)						(2.3) (3.0)
05	260 (9.8)						(3.05)
06	260 (10.6)						(2.1) (3.0)
07	260 (11.0)						(2.2) (3.0)
08	250 14.2	---	---	---	120	3.1	3.0
09	240 14.8	---	---	---	120	3.4	3.0
10	(240) 15.6	240	---	---	120	3.8	4.0
11	---	15.5	240	---	120	3.8	2.7
12	---	15.9	240	---	120	4.0	2.6
13	---	16.6	240	---	---	---	2.6
14	---	17.2	240	---	---	---	2.6
15	---	17.2	240	---	---	---	2.6
16	(240) 16.7	240	---	---	120	2.9	3.2
17	260 17.0	---	---	---			3.2
18	270 17.8						(2.9) 2.7
19	280 18.1						(3.0) 2.7
20	260 >19.0						(2.8) (2.8)
21	240 17.3						2.8
22	240 14.9						2.9
23	240 (13.0)						2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 7

Maui, Hawaii (20.8°N, 156.5°W) November 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	9.1						3.00
01	230	8.0						2.90
02	250	7.0						2.90
03	230	6.0						3.00
04	260	4.2						2.60
05	300	4.0						2.50
06	310	4.4						2.50
07	270	8.6	---	---	131	2.2		2.90
08	250	12.4	250	---	118	2.9		3.10
09	260	14.0	240	---	113	3.4		3.00
10	(270)	14.6	230	---	111	3.7		2.90
11	(260)	14.9	225	---	111	3.8		2.80
12	350	15.5	230	---	111	3.9		2.70
13	370	15.5	235	7.4	111	3.8		2.65
14	370	15.5	240	7.2	111	3.7		2.65
15	360	15.4	240	---	113	3.5	4.0	2.70
16	(320)	15.0	250	---	118	3.0	3.8	2.70
17	250	14.2	250	---	125	2.5	3.4	2.75
18	240	13.8					4.3	2.85
19	240	13.0					3.9	2.90
20	260	12.8					3.2	2.90
21	250	13.1					2.2	3.00
22	230	12.2						3.10
23	220	11.0						3.00

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Panama Canal Zone (9.4°N, 79.9°W) November 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	8.5					(2.8)	3.00
01	240	7.3					(3.3)	2.90
02	240	5.7					3.5	2.80
03	250	5.1					3.6	2.80
04	260	5.0					2.4	2.75
05	290	4.6					4.5	2.70
06	290	6.7					3.5	2.80
07	250	11.0			123	2.6		3.05
08	(250)	13.6	240	---	117	3.3		3.00
09	---	14.3	235	---	111	3.7	4.8	2.95
10	---	14.3	230	---	111	4.0	4.9	2.80
11	---	14.0	230	---	111	4.2	5.0	2.70
12	(380)	13.6	230	---	111	4.2	5.4	2.60
13	400	13.6	230	7.2	111	4.2	5.1	2.50
14	420	13.4	235	7.0	111	3.9	5.2	2.50
15	400	13.4	240	---	109	3.6	5.6	2.50
16	---	13.3	250	---	111	3.2	5.0	2.55
17	---	12.3	255	---	117	2.7	4.0	2.70
18	270	12.2					3.4	2.80
19	260	11.8					3.2	2.90
20	250	11.6					2.8	2.85
21	250	11.0					1.9	2.80
22	240	10.8						2.90
23	240	10.0						3.00

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Reykjavik, Iceland (64.1°N, 21.8°W) October 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.9	---
01	(5.8)						4.1	(2.60)
02	(5.6)						3.8	(2.50)
03	---						4.2	---
04	(5.9)						3.6	(2.50)
05	(5.8)						3.0	(2.65)
06	4.6							2.70
07	5.4							2.85
08	6.9							2.95
09	7.8				111	---		2.95
10	9.3				111	(2.8)		2.90
11	10.8			---	111	2.8		2.90
12	11.3			---	111	(2.9)		2.85
13	11.1			---	115	3.0		2.90
14	11.0			---	117	2.9		2.90
15	10.9			---	116	2.7		2.95
16	10.8				119	2.5	2.6	2.95
17	11.2				---	---	2.7	3.00
18	(10.2)						3.8	(3.00)
19	8.0						3.5	2.95
20	(5.2)						4.0	(2.90)
21	---						3.9	---
22	(6.8)						3.8	(2.50)
23	(6.4)						3.8	(2.60)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 10

Narsarsuaq, Greenland (61.2°N, 45.4°W) October 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.1	---
01	---	---					3.8	---
02	---	---					3.8	---
03	---	---					4.2	---
04	---	---					4.5	---
05	(4.4)						3.7	(2.70)
06	(5.0)							(2.90)
07	(6.5)						3.2	(3.00)
08	(7.8)				119	2.2		(3.05)
09	8.9				119	2.5		3.00
10	10.1				119	2.8		2.95
11	10.6			---	113	2.9		2.90
12	(10.8)			---	113	2.9		(2.90)
13	(10.2)			---	111	2.9		(2.90)
14	(10.0)			---	115	2.7		(2.90)
15	(9.9)			---	117	2.5		(2.90)
16	(11.6)			---	121	2.4		(3.00)
17	(11.2)			---	---	---	3.5	(3.00)
18	---				---	---	3.3	---
19	---						4.1	---
20	---						4.0	---
21	---						5.6	---
22	---						4.6	---
23	---						3.8	---

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Adak, Alaska (51.9°N, 176.6°W) October 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.8						2.55
01	330	3.9						2.60
02	340	3.8						2.55
03	320	3.8						2.50
04	320	4.0						(2.60)
05	310	4.0						(2.55)
06	270	5.2	---	---	---	---		2.75
07	240	7.6	---	---	(125)	2.4		3.10
08	230	10.2	240	---	121	2.7		3.15
09	230	11.9	230	---	115	(3.0)		3.05
10	230	13.0	225	---	117	3.3	3.4	3.00
11	230	13.7	230	---	117	(3.4)		2.95
12	240	13.6	230	---	115	(3.3)		2.90
13	240	13.3	230	---	113	3.2		2.90
14	240	12.8	235	---	115	(3.0)		2.90
15	230	12.2	240	---	123	2.7		2.90
16	230	11.8	---	---	---	2.3		3.00
17	230	10.7			---	---		3.00
18	230	9.0						3.00
19	240	7.6						3.05
20	240	6.0						3.05
21	250	4.5						2.95
22	270	3.9						2.75
23	300	4.0						2.60

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 12

Anchorage, Alaska (61.2°N, 149.9°W) September 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		3.9					1.9	2.50
01		3.8					1.9	2.50
02		3.5					1.5	2.40
03		(3.8)					2.0	(2.45)
04		(3.9)						(2.45)
05		4.2			---	---		2.50
06		5.0			3.0	121	2.0	2.70
07		5.6			(3.8)	121	2.4	2.75
08		6.4			4.1	117	2.7	2.75
09		6.9			4.4	119	(3.0)	2.70
10		7.2			(4.6)	118	3.2	2.65
11		7.6			4.8	115	3.3	2.65
12		7.6			4.9	<117	3.3	2.65
13		7.8			4.8	115	3.2	2.65
14		7.9			4.8	118	3.1	2.70
15		8.1			(4.7)	118	3.0	2.70
16		8.3			(4.4)	121	2.5	2.80
17		8.0			---	126	2.2	2.85
18		7.8			---	---		2.90
19		7.2						2.90
20		6.2						2.80
21		5.0						2.80
22		4.3						2.75
23		(3.9)						(2.65)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Baguio, P. I. (16.4°N, 120.6°E)

September 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	13.7						3.20
01	220	13.0						3.30
02	210	10.0						3.15
03	220	8.2					1.6	3.00
04	230	7.6					2.2	3.00
05	220	6.3					2.8	3.20
06	260	7.4					3.0	3.00
07	240	9.9			111	(2.7)	4.0	3.05
08	230	11.3			109	(3.2)	4.8	2.70
09	(220)	12.2	220		107	(3.7)	5.2	2.50
10		12.5	215		(107)	(3.9)	5.4	2.35
11		12.5	210			(4.0)	4.4	2.30
12		12.5	210		(105)	4.1	4.1	2.30
13		13.2	210			4.0		2.25
14		13.7	215		107	4.0	4.6	2.35
15		14.2	220		107	3.7	4.4	2.45
16	(240)	14.0	230		109	3.2	4.5	2.50
17	250	13.5			111	(2.4)	4.4	2.40
18	280	13.0				3.8		2.40
19	360	(11.9)				2.4	(2.30)	2.30
20	330	11.5				2.1		2.40
21	280	13.0				2.8		2.65
22	270	(13.0)				2.1		2.90
23	250	13.5						3.05

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Tromsø, Norway (69.7°N, 19.0°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	5.20	---	---	---	---	4.3	2.55
01	(360)	5.20	305	---	---	---	3.2	2.55
02	(325)	(6.10)	265	---	---	---	4.0	(2.55)
03	(360)	5.70	290	---	---	---	4.0	2.55
04	(400)	5.85	245	3.70	100	2.40	4.0	2.60
05	420	5.75	240	4.00	105	2.70	<3.0	2.65
06	420	5.90	245	4.30	100	2.95	3.0	2.60
07	440	5.80	240	4.50	100	3.00	3.2	2.70
08	420	6.05	235	4.70	100	3.20	<2.2	2.60
09	435	6.10	230	4.75	100	3.25	<3.6	2.60
10	420	6.30	225	4.95	100	3.30	4.0	2.60
11	405	6.35	215	4.95	100	3.30	4.0	2.70
12	440	6.40	215	4.95	100	3.30	<3.6	2.70
13	395	6.40	205	4.95	100	3.30	<3.6	2.70
14	415	6.25	210	4.80	100	3.30	<2.2	2.70
15	400	6.10	220	4.70	100	3.25	3.2	2.80
16	(360)	5.95	240	4.70	100	3.20	<3.6	2.75
17	(435)	5.95	245	4.50	100	3.00	4.0	2.80
18	---	6.10	250	---	100	2.80	4.0	2.85
19	---	5.85	250	---	105	2.65	4.0	2.85
20	---	5.90	255	---	105	---	4.0	2.80
21	(295)	5.70	---	---	105	---	4.0	2.70
22	(300)	5.65	---	---	---	---	4.0	2.70
23	---	5.40	---	---	---	---	4.2	(2.55)

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 15

Kiruna, Sweden (67.8°N, 20.3°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(5.3)	---	---	---	---	5.0	(2.6)
01	355	(5.4)	---	---	---	---	4.0	2.5
02	350	5.8	---	3.0	100	E	4.0	2.6
03	390	5.2	260	3.5	105	2.0	4.0	2.6
04	415	5.2	245	3.8	100	2.3	3.1	2.6
05	410	5.5	240	4.0	105	2.5	<3.5	2.6
06	400	5.6	230	4.2	105	2.8		2.6
07	430	5.8	220	4.4	100	3.0		2.6
08	425	6.0	215	4.6	100	3.1	<3.5	2.7
09	425	6.1	210	4.9	100	3.2	3.9	2.6
10	405	6.3	210	5.0	100	3.2	4.0	2.65
11	410	6.3	210	5.0	100	3.2	4.0	2.6
12	390	6.4	210	5.0	100	3.4	3.8	2.7
13	395	6.3	210	5.0	100	3.2	3.8	2.6
14	375	6.2	205	4.9	100	3.2	<3.6	2.7
15	375	6.2	210	4.9	100	3.1		2.8
16	355	6.0	220	4.7	100	3.0		2.75
17	(365)	6.0	230	4.6	105	2.9	3.5	2.7
18	---	6.0	240	4.1	105	2.8	3.5	2.85
19	---	6.0	250	(4.0)	105	2.4	4.0	2.8
20	(295)	6.0	255	---	110	2.1	3.9	2.8
21	295	5.9	265	---	110	1.9	4.0	2.8
22	305	5.4	---	---	---	E	4.0	2.7
23	305	5.8	---	---	---	---	4.0	2.7

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 16

Oe Bilt, Holland (52.1°N, 5.2°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.5						2.4
01	290	6.2						2.4
02	290	5.6						2.4
03	290	5.2						2.4
04	270	5.5	270	---	125	1.6	2.0	2.5
05	310	5.8	240	3.9	110	2.3	2.7	2.5
06	320	6.4	230	4.3	105	2.8	3.3	2.7
07	360	6.5	220	4.6	100	3.1	3.8	2.7
08	345	6.8	210	4.9	100	3.3	4.0	2.6
09	360	6.8	210	5.2	100	3.5	4.1	2.65
10	350	7.0	200	5.2	100	3.6	4.7	2.5
11	330	7.0	210	5.2	100	3.6	4.4	2.7
12	340	7.0	200	5.3	100	3.7	4.1	2.7
13	350	6.8	200	5.2	100	3.7	4.0	2.55
14	350	6.9	200	5.2	100	3.6	3.8	2.6
15	345	6.9	220	5.2	100	3.5	3.6	2.7
16	330	6.9	220	4.8	100	3.3	3.7	2.7
17	310	7.1	220	4.7	100	3.0	3.6	2.8
18	290	7.2	240	4.0	110	2.6	3.5	2.8
19	260	7.2	250	---	120	2.0	3.2	2.8
20	260	7.2					2.0	2.7
21	260	7.0					1.7	2.7
22	275	6.8					1.7	2.5
23	280	6.8						2.4

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 17

Lindau/Harz, Germany (51.6°N, 10.1°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.80					2.8	2.60
01	290	6.55					2.6	2.55
02	290	6.20					2.6	2.55
03	280	5.80				E	2.7	2.60
04	300	5.40	275	---	---	E	3.1	2.65
05	300	5.65	260	---	110	1.85	4.1	2.65
06	320	6.10	250	4.00	110	2.50	4.9	2.80
07	340	6.55	230	4.60	100	2.90	4.9	2.75
08	330	6.80	225	4.80	100	3.20	5.3	2.75
09	355	7.10	220	5.00	100	3.45	5.9	2.80
10	360	7.30	225	5.20	100	3.55	5.8	2.70
11	360	7.30	210	5.30	100	3.70	5.3	2.75
12	360	7.40	215	5.35	100	3.75	5.9	2.75
13	350	7.30	210	5.40	100	3.70	5.1	2.70
14	370	7.10	210	5.30	100	3.70	5.3	2.70
15	370	7.10	215	5.20	100	3.60	4.9	2.75
16	350	7.15	220	5.10	100	3.40	4.8	2.80
17	340	7.25	225	4.90	100	3.15	4.4	2.80
18	310	7.35	240	4.50	105	2.80	4.6	2.80
19	280	7.55	250	---	110	2.40	4.4	2.80
20	260	7.60	---	---	125	1.60	3.9	2.85
21	250	7.60				E	3.5	2.80
22	260	7.50					3.4	2.65
23	275	7.10					3.0	2.60

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 18

Wakkanai, Japan (45.4°N, 141.7°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	7.4					2.9	
01	270	7.3					3.4	
02	280	6.8					3.0	
03	270	6.5					3.0	
04	290	6.3					2.8	
05	300	6.8						5.6
06	320	7.3						5.9
07	300	7.6						6.0
08	330	7.6						6.0
09	340	7.6						5.3
10	370	7.0						5.6
11	360	7.5						5.0
12	360	7.3						5.0
13	370	7.4						5.2
14	370	7.3						5.5
15	360	7.2						5.5
16	350	7.4						5.5
17	300	7.2						6.2
18	280	7.5						4.5
19	270	7.6						4.8
20	280	7.5						4.0
21	280	7.6						
22	280	7.6						
23	280	7.8						

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 19

Akita, Japan (39.7°N, 140.1°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.6					4.3	
01	300	7.3					4.1	
02	290	7.0					4.2	
03	290	6.6					3.6	
04	300	6.4					3.1	
05	280	6.9					3.5	
06	300	7.9					4.4	
07	310	8.3					5.2	
08	300	8.1					5.4	
09	350	8.1					6.5	
10	360	8.0					6.7	
11	380	8.2					6.5	
12	380	8.4					6.2	
13	390	8.2					5.4	
14	360	8.4					5.7	
15	350	8.2					5.0	
16	350	7.9					4.8	
17	330	7.8					4.5	
18	300	8.0					4.4	
19	280	7.9					4.2	
20	270	7.6					4.0	
21	300	7.8					4.2	
22	300	7.7					4.4	
23	300	7.8					4.6	

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 20

Tokyo, Japan (35.7°N, 139.5°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	7.9					3.9	2.7
01	300	7.5					3.8	2.8
02	300	7.2					4.2	2.7
03	290	6.7					3.8	2.7
04	300	6.5					3.0	2.7
05	270	6.8	270	---	130	1.8	3.0	2.7
06	290	8.4	250	4.0	120	2.6	3.8	2.8
07	280	8.9	250	4.5	110	3.1	4.8	2.9
08	320	8.5	240	5.2	110	3.5	5.8	2.8
09	350	8.2	220	5.5	110	3.7	6.0	2.7
10	390	8.6	230	5.5	110	3.8	6.3	2.6
11	400	8.8	260	5.8	110	3.9	6.5	2.6
12	380	9.4	250	5.5	110	3.9	6.0	2.7
13	380	9.0	230	5.5	110	3.8	6.0	2.7
14	370	9.4	230	5.5	110	3.8	6.3	2.7
15	350	9.4	230	5.2	110	3.7	6.0	2.8
16	340	8.6	250	5.0	110	3.3	5.8	2.8
17	330	8.6	250	4.6	110	2.9	6.0	2.8
18	300	8.6	260	4.0	120	2.2	5.5	2.9
19	270	8.2					4.0	2.9
20	300	7.5					4.4	2.7
21	300	7.8					4.2	2.6
22	310	7.9					4.4	2.6
23	310	7.8					4.4	2.7

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 21

Yamagawa, Japan (31.2°N, 130.6°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	8.1					3.6	
01	290	8.1					3.6	
02	280	8.1					3.1	
03	260	6.9					3.0	
04	280	6.4					2.6	
05	290	6.3					2.4	
06	250	7.2					2.3	
07	250	8.5					3.7	
08	280	7.9					5.9	
09	290	7.7					6.0	
10	340	8.4					5.9	
11	350	8.7					5.9	
12	370	9.2					5.9	
13	350	9.9					6.0	
14	350	10.0					5.9	
15	340	10.0					5.9	
16	330	9.8					6.5	
17	310	9.8					5.9	
18	290	9.5					5.6	
19	270	8.6					3.8	
20	290	8.1					3.5	
21	310	8.0					3.4	
22	320	8.2					3.6	
23	310	8.1						

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 22

Johannesburg, Union of S. Africa (26.2°S, 28.1°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.7						2.8
01	---	2.8						2.8
02	(250)	2.8					1.9	2.9
03	250	2.9						3.0
04	240	2.7					1.9	3.0
05	240	2.6					3.2	2.9
06	<250	2.7					2.2	3.0
07	240	5.6				1.9		3.2
08	230	7.9	230	---	120	2.6		3.4
09	240	9.0	230	4.4	110	3.1		3.2
10	250	9.7	220	4.8	110	3.4		3.2
11	250	9.7	210	4.8	110	3.6		3.1
12	270	9.7	210	4.9	110	3.7		3.1
13	270	9.9	210	4.8	110	3.7	4.2	3.0
14	270	10.0	210	4.8	110	3.5	4.2	3.0
15	260	9.9	220	---	110	3.2	3.9	3.0
16	250	9.7	230	---	110	2.9	3.3	3.0
17	240	9.4			130	2.2	2.9	3.2
18	220	8.0					2.3	3.2
19	220	5.5					1.9	3.2
20	230	3.9						3.2
21	240	3.4						3.2
22	240	3.0						3.1
23	<250	2.8						3.0

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 23

Capetown, Union of S. Africa (34.2°S, 18.3°E)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	2.6					2.8	2.8
01	<280	2.6					3.0	2.8
02	270	2.8					2.7	2.8
03	270	2.9					2.9	2.8
04	260	2.9					2.8	2.9
05	250	2.7					1.8	2.9
06	<270	2.7					1.8	2.8
07	250	2.7					2.6	2.9
08	230	5.7				1.8	3.0	3.2
09	240	8.0	230	---	120	2.6		3.3
10	250	8.2	230	---	120	3.0		3.2
11	250	9.0	230	4.5	120	3.3		3.2
12	260	9.8	220	4.7	120	3.4		3.1
13	270	10.1	220	---	120	3.5		2.9
14	260	10.3	230	---	120	3.4		2.9
15	260	10.3	230	---	120	3.2		2.9
16	250	10.1	230	---	120	2.9	3.1	3.0
17	240	9.8	---	---	120	2.5		3.0
18	220	8.7			---	---	3.0	3.2
19	210	5.6					2.5	3.2
20	220	4.0					2.8	3.2
21	240	3.2					2.6	3.2
22	240	2.5					2.9	3.1
23	<270	2.4					2.6	2.8

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 24

Buenos Aires, Argentina (34.5°S, 58.5°W)

July 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.4						2.9
01	280	4.8						2.9
02	280	4.6						2.9
03	260	4.4						3.05
04	240	4.1						3.2
05	260	3.4						3.1
06	300	3.2						3.0
07	240	5.3						3.2
08	220	7.9						3.5
09	220	8.4	220	---				3.4
10	240	9.2	220	---				3.4
11	260	9.5	210	---				3.3
12	270	10.0	220	---				3.2
13	270	10.6	220	---				3.1
14	250	10.0	220	---				3.3
15	230	9.8	220	---				3.3
16	220	9.5	---	---				3.4
17	210	9.5						3.45
18	200	7.2						3.3
19	220	6.9						3.0
20	230	7.6						3.0
21	220	7.7						3.0
22	240	6.5						3.0
23	280	5.4						2.9

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 25

Resolute Bay, Canada (74.7°N, 94.9°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	---	---	110	2.2		(3.0)
01		5.2			3.5	105	2.2	---
02		5.2			3.5	105	2.2	(2.9)
03		5.1			3.8	105	2.3	---
04		5.2			3.9	100	2.5	(2.8)
05		5.0			4.0	100	2.7	---
06		5.1			4.1	100	2.9	---
07		5.2			4.2	100	3.0	---
08		5.0			4.2	100	3.1	G
09		5.2			4.3	100	3.2	---
10		5.2			4.4	100	3.2	---
11		5.2			4.4	100	3.2	---
12		5.3			4.5	100	3.3	---
13		5.2			4.4	100	3.3	G
14		5.2			4.3	100	3.2	G
15		5.2			4.3	100	3.2	---
16		5.2			4.4	100	3.1	---
17		5.3			4.2	100	3.0	---
18		5.3			4.2	100	2.9	---
19		5.3			4.1	100	2.8	(2.75)
20		5.4			4.0	100	2.7	(2.85)
21		5.4			3.9	105	2.5	(2.85)
22		5.3			3.8	105	2.3	(2.95)
23		5.3			3.3	105	2.3	(3.0)

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 26

Baker Lake, Canada (64.3°N, 96.0°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.2			---	1.4	1.9	2.8
01		5.2			---	1.3	1.4	2.8
02		4.8			110	1.6	1.8	2.9
03		4.8			---	105	1.9	2.9
04		4.9			3.4	110	2.2	(2.9)
05		4.7			3.7	110	2.4	2.8
06		4.8			4.0	105	2.7	(2.5)
07		4.6			4.2	105	3.0	G
08		4.7			4.4	100	3.3	G
09		5.1			4.5	100	3.5	G
10		5.4			4.7	100	3.7	G
11		5.5			4.8	100	3.7	2.5
12		5.8			4.9	100	3.8	2.5
13		6.2			4.8	100	3.7	2.6
14		6.2			4.8	100	3.6	2.6
15		6.4			4.8	100	3.5	2.6
16		6.2			4.7	100	3.4	2.7
17		6.1			4.6	100	3.2	2.75
18		5.6			4.3	105	3.0	2.7
19		5.7			4.0	105	2.6	5.8
20		5.4			4.0	110	2.4	5.4
21		5.7			---	110	2.2	5.6
22		5.3			---	110	1.9	4.2
23		5.3			---	110	1.7	2.8

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 27

Churchill, Canada (58.8°N, 94.2°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.2					6.0	---
01		5.0			---	---	6.0	---
02		4.7			---	---	5.5	---
03		5.0			---	2.5	6.0	---
04		4.8			120	2.5	5.2	---
05		4.5			3.5	110	2.8	---
06		4.9			3.9	110	3.0	4.9
07		5.1			4.2	100	3.4	4.6
08		5.4			4.6	100	3.7	5.0
09		5.5			4.7	100	3.7	2.6
10		5.7			4.8	100	3.7	4.0
11		6.0			5.0	100	3.7	2.6
12		6.1			5.0	100	3.7	2.65
13		6.0			5.0	100	3.7	2.6
14		6.5			4.9	100	3.6	2.7
15		6.5			4.9	100	3.5	2.7
16		6.5			4.8	100	3.4	2.8
17		6.2			4.7	110	3.3	2.8
18		6.0			4.3	110	3.1	2.8
19		5.5			4.0	110	3.0	5.0
20		5.3			---	120	3.0	4.6
21		5.3			---	120	2.7	5.9
22		5.2			---	125	2.2	6.5
23		5.0			---	---	7.0	---

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 28

Lindau/Harz, Germany (51.6°N, 10.1°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.00					2.2	2.55
01	300	6.50					2.2	2.55
02	290	6.10					2.2	2.55
03	290	5.90			---	E	2.4	2.55
04	300	5.60	305	---	---	1.20	3.5	2.60
05	330	6.00	255	3.40	115	2.05	4.2	2.60
06	340	6.40	240	4.10	110	2.60	4.7	2.70
07	365	6.60	240	4.70	100	2.95	5.0	2.70
08	350	7.25	220	4.80	100	3.20	5.1	2.70
09	360	7.55	215	4.95	100	3.40	5.7	2.70
10	350	8.00	210	5.20	100	3.50	6.4	2.70
11	385	7.75	210	5.20	100	3.60	7.0	2.65
12	370	7.60	210	5.30	100	3.60	7.0	2.70
13	380	7.40	215	5.30	100	3.65	6.8	2.65
14	370	7.15	210	5.30	100	3.60	6.4	2.70
15	360	7.20	225	5.20	100	3.50	5.5	2.70
16	365	7.25	220	5.05	100	3.40	5.3	2.70
17	340	7.30	230	4.70	100	3.15	5.1	2.75
18	300	7.60	240	4.50	105	2.80	4.5	2.75
19	290	7.50	250	---	110	2.30	5.1	2.80
20	270	7.80	---	---	115	1.60	4.2	2.80
21	260	7.75			---	E	3.6	2.75
22	260	7.50					3.0	2.65
23	285	7.15					2.4	2.60

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 29

Winnipeg, Canada (49.9°N, 97.4°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		4.5					<1.6	---
01		4.0					4.0	---
02		4.0					5.0	(2.70)
03		3.8					3.6	---
04		4.0					2.9	---
05		4.4			---	130	2.0	(2.70)
06		4.9			3.8	120	2.5	2.70
07		5.0			4.1	110	3.0	2.55
08		5.2			4.4	110	3.1	2.50
09		5.3			4.7	110	3.4	2.50
10		5.6			4.8	110	3.7	2.50
11		5.7			4.9	105	3.8	2.50
12		5.9			5.0	105	3.9	2.50
13		6.0			5.0	105	3.8	2.50
14		6.0			5.0	110	3.8	2.50
15		6.1			4.9	110	3.6	2.50
16		6.2			4.8	110	3.4	2.60
17		6.3			4.6	110	3.2	2.60
18		6.7			---	115	3.0	2.70
19		6.8			---	120	2.5	2.80
20		6.9			---	130	2.0	2.80
21		6.5			---	---	<1.8	2.80
22		6.2			---	---	<1.7	(2.80)
23		5.0			---	---	<1.6	---

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Ottawa, Canada (45.4°N, 75.9°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.2					3.0	2.8
01		4.8					3.1	2.8
02		4.3					3.0	2.7
03		4.0					3.0	2.7
04		3.7					<2.0	2.8
05		4.2			3.3	110	2.1	2.9
06		4.8			4.0	110	2.7	2.7
07		5.2			4.5	105	3.0	2.8
08		5.5			4.7	105	3.3	2.65
09		5.8			4.9	105	3.6	2.65
10		5.9			5.0	105	3.8	2.6
11		6.0			5.0	105	4.0	2.5
12		6.1			5.1	105	4.0	2.5
13		6.3			5.0	105	4.0	2.5
14		6.5			5.0	105	3.9	2.6
15		6.6			5.0	105	3.8	2.6
16		6.8			5.0	105	3.5	2.7
17		6.9			4.7	105	3.2	2.8
18		7.0			4.1	110	2.8	2.8
19		7.2			---	115	2.1	2.9
20		7.2			---	115	1.6	<1.8
21		7.0					<1.7	2.8
22		6.4					<1.6	2.8
23		5.8					<1.6	2.8

Time: 75.0°W.

Sweep: 1.0 Mc to 15.0 Mc in 15 seconds.

Table 31

Wakkanai, Japan (45.4°N, 141.7°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	7.3					3.3	
01	280	7.2					3.2	
02	280	6.6					3.5	
03	280	6.5					3.5	
04	300	6.4					3.5	
05	350	7.0					3.8	
06	350	7.3					4.8	
07	330	7.3					6.2	
08	340	7.2					6.1	
09	360	6.6					6.5	
10	400	6.6					6.2	
11	410	6.7					6.0	
12	400	6.9					6.0	
13	400	6.8					6.1	
14	360	7.0					5.5	
15	370	7.2					5.2	
16	350	7.2					4.8	
17	320	7.5					6.0	
18	300	7.5					5.2	
19	280	7.6					6.0	
20	280	7.9					6.0	
21	300	7.7					4.8	
22	280	7.6					4.4	
23	280	7.6					3.3	

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 32

Akita, Japan (39.7°N, 140.1°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.0					4.5	
01	300	7.6					4.2	
02	300	7.4					4.4	
03	310	6.5					4.2	
04	320	6.6					3.9	
05	320	7.1					4.0	
06	340	8.0					4.5	
07	330	8.2					6.0	
08	340	7.8					6.4	
09	380	7.3					6.7	
10	400	7.2					6.7	
11	420	7.6					6.5	
12	390	7.8					6.2	
13	390	8.0					5.8	
14	380	8.2					6.4	
15	360	8.2					5.4	
16	350	8.3					6.0	
17	340	8.2					5.8	
18	310	8.3					5.8	
19	300	8.3					4.5	
20	300	8.1					5.2	
21	310	8.0					5.7	
22	330	8.4					4.9	
23	320	7.9					5.6	

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 33

Tokyo, Japan (35.7°N, 139.5°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	7.6					5.8	2.7
01	310	7.5					5.9	2.8
02	300	7.8					5.6	2.7
03	310	7.0					4.5	2.7
04	290	6.9					3.9	2.7
05	270	7.2	260	3.3	130	1.8	3.2	2.7
06	320	8.1	240	4.7	120	2.7	4.8	2.8
07	310	8.8	240	4.7	110	3.2	6.0	2.9
08	320	8.2	240	5.2	110	3.5	6.6	2.8
09	360	7.6	210	5.5	110	3.6	7.2	2.75
10	380	7.8	220	5.6	110	3.8	7.2	2.6
11	410	8.0	220	5.6	110	3.8	7.0	2.6
12	380	8.6	---	5.5	110	3.8	6.6	2.7
13	380	8.8	240	5.5	110	3.7	6.4	2.7
14	360	9.1	240	5.4	110	3.7	6.1	2.7
15	350	9.0	250	5.1	110	3.6	6.0	2.8
16	340	9.1	250	5.0	110	3.3	5.7	2.8
17	310	8.8	250	4.5	110	2.9	6.0	2.8
18	300	8.6	260	4.0	120	2.1	4.5	2.8
19	280	8.2					4.5	2.8
20	290	8.0					3.8	2.7
21	300	7.9					3.7	2.6
22	320	8.0					5.2	2.6
23	320	8.1					5.7	2.7

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 34

Yamagawa, Japan (31.2°N, 130.6°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	8.6					4.4	
01	300	8.6					3.8	
02	280	8.5					4.2	
03	280	7.4					3.6	
04	290	7.0					3.4	
05	290	6.8					2.9	
06	260	8.0					3.2	
07	250	8.5					3.6	
08	260	8.4					5.9	
09	300	8.4					6.5	
10	330	8.5					6.6	
11	380	8.7					6.6	
12	370	9.0					6.7	
13	340	9.8					5.9	
14	340	10.0					5.9	
15	340	10.4					5.9	
16	320	10.5					5.9	
17	300	10.1					5.9	
18	290	10.0					5.6	
19	280	9.0					4.2	
20	280	8.7					3.7	
21	290	8.5					3.1	
22	310	8.4					3.4	
23	300	8.5					3.4	

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 35

Leopoldville, Belgian Congo (4.4°S, 15.2°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	9.5					3.0	2.9
01	215	7.8					3.2	2.9
02	230	6.6					3.0	2.7
03	230	4.7					2.8	2.8
04	245	4.0					2.6	2.8
05	270	5.4	---	---	---	---	2.9	2.7
06	260	9.3	240	---	120	2.5	3.0	2.9
07	260	11.5	230	---	110	3.1	3.9	2.9
08	270	11.5	220	---	110	3.5	4.4	2.8
09	280	12.0	210	---	105	3.7	4.9	2.8
10	310	11.5	210	5.0	105	3.8	4.4	2.6
11	325	12.2	205	5.4	105	3.8	5.0	2.6
12	320	12.6	220	5.2	105	3.8	4.3	2.5
13	340	13.1	235	5.5	105	3.6	4.4	2.5
14	330	13.0	245	---	110	3.4	4.6	2.5
15	320	13.1	240	---	110	3.0	4.6	2.5
16	290	13.3	250	---	120	2.5	4.9	2.6
17	255	>13.6	---	---			4.3	2.7
18	240	>13.9					3.2	2.9
19	220	>13.0					3.0	<3.0
20	210	>13.0					2.7	2.9
21	210	>13.0					2.2	2.7
22	220	12.9					2.6	2.8
23	210	>10.9					3.0	2.9

Time: 0.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 36

Elisabethville, Belgian Congo (11.6°S, 27.5°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0					1.6	2.6
01	265	2.7						2.6
02	265	2.6					1.6	2.7
03	270	2.4					1.6	2.7
04	270	3.4						2.6
05	245	7.2	245	---	120	2.1	2.7	3.0
06	250	9.8	230	---	110	2.9		3.0
07	255	11.0	225	---	110	3.3		2.9
08	260	10.6	220	---	105	3.6	4.0	2.8
09	275	10.7	230	4.8	105	3.7	4.0	2.7
10	280	10.6	230	5.0	105	3.7	4.8	2.7
11	290	10.1	230	5.0	105	3.7	4.6	2.6
12	300	10.0	245	---	105	3.6	4.0	2.5
13	295	10.0	240	---	110	3.4	4.1	2.5
14	280	10.2	235	---	110	3.0	4.0	2.5
15	255	10.8	250	---	120	2.4	3.7	2.7
16	240	10.4					3.3	2.8
17	220	9.2					3.0	3.0
18	215	6.8					2.8	3.0
19	225	5.4					2.6	2.7
20	240	5.0					2.6	2.7
21	240	5.0					2.6	2.7
22	240	4.5					2.2	2.8
23	255	3.6					1.8	2.7

Time: 0.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 37

Johannesburg, Union of S. Africa (26.2°S, 28.1°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.8						2.9
01	---	2.9						2.8
02	---	2.9						2.8
03	(250)	2.9						2.9
04	230	2.9						3.0
05	(240)	2.7						3.0
06	<240	2.7					3.1	3.0
07	240	5.6			---	1.9		3.2
08	230	8.2			---	120		3.4
09	240	9.6	220	4.3	110	3.0		3.3
10	250	10.2	220	4.7	110	3.3		3.2
11	250	10.6	210	4.8	110	3.5		3.2
12	250	10.1	210	4.9	110	3.6		3.1
13	260	10.1	220	4.8	110	3.6	4.0	3.0
14	250	10.1	220	4.9	110	3.4	3.9	3.0
15	250	10.2	220	4.5	110	3.1	4.0	3.0
16	240	10.2	230	3.8	110	2.7	3.6	3.1
17	230	9.5			140	2.2	2.9	3.2
18	210	7.2					2.8	3.3
19	220	4.5					2.6	3.2
20	240	3.7					2.2	3.2
21	250	3.4					1.8	3.1
22	<250	3.1						3.1
23	<250	3.0						2.95

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 38

Capetown, Union of S. Africa (34.2°S, 18.3°E)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.5						2.9
01	<280	2.7						2.6
02	<280	2.9						3.0
03	<260	2.9						2.9
04	260	3.0						2.8
05	<250	2.9						2.4
06	250	2.7						2.8
07	240	2.6						2.9
08	240	5.6			---	1.9		3.0
09	230	7.7	230	---	---	120	2.6	2.8
10	250	8.8	230	---	---	120	2.9	3.2
11	250	9.6	230	4.5	110	3.2		3.2
12	250	9.9	220	4.6	110	3.4		3.15
13	250	10.2	220	4.7	120	3.4		3.0
14	260	10.6	220	4.6	120	3.3		2.95
15	250	10.7	230	4.4	120	3.1		3.0
16	250	10.4	230	---	---	120	2.8	3.6
17	230	9.9	---	---	---	120	2.3	3.0
18	210	8.2						2.8
19	220	5.0						2.8
20	230	3.7						2.8
21	240	3.1						2.0
22	240	2.7						2.8
23	250	2.6						3.0

Time: 30.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 39

Buenos Aires, Argentina (34.5°S, 58.5°W)

June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.8						2.8
01	300	4.7						2.9
02	300	4.5						2.9
03	300	4.4						2.9
04	280	4.2						2.95
05	280	3.7						2.9
06	290	3.6						3.0
07	230	6.0						3.1
08	220	8.1	---	---				3.3
09	230	9.4	220	---				3.35
10	230	9.4	220	---				3.3
11	240	9.2	210	---	---	---		3.3
12	260	9.8	220	---				3.1
13	260	10.1	220	---				3.2
14	260	10.4	220	---				3.15
15	230	10.4	220	---				3.3
16	220	9.9						3.2
17	210	8.8						3.3
18	210	7.0						3.2
19	220	7.0						3.0
20	220	7.0						3.0
21	230	6.6						3.05
22	250	5.8						3.1
23	280	5.3						2.9

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 40

Poitiers, France (46.6°N, 0.3°E)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						(2.80)
01	295	3.5					1.9	2.85
02	<290	3.6						(2.85)
03	260	3.6						2.95
04	250	3.4						3.00
05	<240	3.2						(3.15)
06	<240	2.9						3.00
07	<240	3.7						(2.95)
08	215	6.0	160	2.2	---	E		3.55
09	215	6.9	205	2.7	115	2.3		---
10	225	(7.5)	210	3.4	110	2.6		2.2
11	230	(8.6)	225	4.0	105	2.8		2.5
12	230	(8.3)	220	4.0	110	2.9		3.0
13	230	(7.9)	220	3.8	110	2.8		2.4
14	235	(7.8)	230	3.5	110	2.6		2.5
15	225	(8.0)	210	2.5	120	2.2		2.6
16	210	(6.9)	175	1.9	---	E		2.4
17	205	(5.6)	---	---	---	E		2.0
18	225	4.5	---	---	---	---		2.3
19	<230	4.1						2.3
20	<230	3.3						2.3
21	<270	3.0						2.80
22	300	3.2						2.2
23	300	3.4						2.1

Time: 0.0°.

Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 41

Casablanca, Morocco (33.6°N, 7.6°W)

December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.95						3.00
01	280	3.90						3.00
02	270	4.00						3.05
03	260	4.00						3.10
04	250	3.80						3.20
05	240	3.10						3.20
06	295	3.00						2.80
07	275	3.80						3.05
08	230	7.20	245	---	---	1.70		3.50
09	230	8.30	235	(3.60)	115	2.60		3.55
10	240	9.00	230	4.30	110	2.90	3.1	3.60
11	240	8.90	220	4.50	110	3.10	3.5	3.50
12	250	9.10	220	4.60	110	3.20		3.40
13	250	8.80	220	4.50	110	3.25		3.30
14	245	8.70	220	4.40	110	3.10		3.30
15	250	9.00	230	(3.90)	115	2.90		3.30
16	240	8.60	235	(3.30)	120	2.50	3.0	3.40
17	225	8.20	---	---	---	E	1.9	3.45
18	210	>5.20					2.2	3.40
19	235	4.45						3.20
20	250	4.40						3.10
21	255	4.30						3.10
22	270	3.90						3.00
23	295	3.90						2.90

Time: 0.0°.

Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 42

Oelhi, India (28.6°N, 77.1°E)

December 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	>3.2						3.00
01	320	3.2						3.00
02	(340)	(3.3)						(2.90)
03								
04	300	3.2						3.10
05	290	3.1						3.10
06	280	3.4						3.25
07	240	6.7						3.60
08	240	9.4						3.60
09	240	>10.0						3.60
10	240	10.0						3.60
11	240	9.8						3.60
12	280	10.9						3.25
13	280	11.0						3.25
14	280	10.8						3.25
15	280	10.6						3.25
16	240	10.0						3.60
17	240	9.6						3.60
18	240	7.2						3.60
19	280	6.9						3.25
20	240	6.6						3.60
21	280	4.8						3.25
22	280	3.7						3.25
23	360	3.2						2.80

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 43

Ahmedabad, India (23.0°N, 72.6°E)								
December 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.6						2.70
01	280	5.0						2.85
02	250	5.0						3.05
03	240	4.8						3.20
04	235	3.5						3.40
05	250	2.9						3.20
06	265	2.8					>3.0	2.90
07	250	6.1			125	1.7	3.9	3.40
08	250	9.6		4.0	110	2.5	4.0	3.40
09	250	11.0	230	4.4	110	3.0	4.0	3.40
10	250	11.0	215	4.6	107	3.2	4.0	3.40
11	255	11.0	220	5.0	105	3.4	4.0	3.10
12	280	12.2	225	5.0	105	3.5	4.0	2.95
13	275	12.6	225	4.8	105	3.5	4.0	3.00
14	275	13.6	225	4.8	110	3.3	3.9	3.00
15	260	13.2	225	4.4	110	3.1	4.0	3.10
16	240	12.5	235	4.0	112	2.6	4.0	3.15
17	230	13.0				1.8	3.0	3.15
18	210	11.9					3.2	3.30
19	210	10.8						3.10
20	225	11.0						3.10
21	215	10.6						3.25
22	215	8.0						3.30
23	230	6.1						3.10

Time: 75.0°E.

Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 44

Calcutta, India (22.9°N, 88.5°E)								
December 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.2						2.85
01	260	4.5						3.00
02	250	4.4						3.10
03	240	4.1						3.25
04	220	3.2						3.10
05	235	2.6						3.10
06	280	3.1						2.85
07	250	6.5	---	---	120	2.0	2.0	3.30
08	250	9.8	240	4.3	115	2.6		3.40
09	260	10.5	230	4.5	110	3.0		3.40
10	260	10.6	220	4.8	105	3.4		3.40
11	265	11.0	205	5.0	100	3.5		3.20
12	280	11.0	200	5.0	100	3.5		(3.10)
13	300	11.5	200	4.8	100	3.5		3.20
14	280	11.5	215	4.7	100	3.2		3.20
15	250	11.0	230	4.5	100	3.0		3.40
16	240	10.6	230	---	110	2.6		3.35
17	225	10.4	---	---	115	2.0		3.40
18	205	9.7					2.1	3.45
19	205	9.5						3.35
20	225	9.1					2.1	3.25
21	220	8.8						3.45
22	210	7.0						3.45
23	<230	4.8						3.10

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 45

Bombay, India (19.0°N, 73.0°E)								
December 1955								
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		280	4.8					3.20
07		300	5.9					3.10
08:30		330	7.8					3.00
09		330	8.9					2.95
10		360	10.0					2.80
11		390	11.4					2.65
12		390	11.9					2.65
13		420	12.6					2.55
14		400	12.1					2.60
15		390	11.3					2.65
16		390	11.4					2.65
17		360	>10.0					2.80
18		360	9.8					2.80
19		330	9.0					2.95
20	(300)	(7.2)						(3.10)
21		300	6.4					3.10
22		270	5.3					3.35
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 46

Madras, India (13.0°N, 80.2°E)								
December 1955								
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		320	7.1					3.00
07		360	8.6					2.80
08		360	9.4					2.80
09		400	>10.1					2.60
10		400	>10.2					2.60
11		400	11.1					2.60
12		400	>10.5					2.60
13		440	>11.0					2.50
14		440	10.9					2.50
15		450	11.2					2.45
16		430	11.5					2.50
17		420	11.3					2.55
18		400	>11.0					2.60
19		360	>10.5					2.80
20		360	>9.8					2.80
21		360	>9.0					2.80
22		---	>8.5					---
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 47

Tiruchy, India (10.8°N, 78.8°E)								
December 1955								
Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06		320	6.2					3.00
07		360	8.3					2.80
08		400	9.1					2.60
09		400	9.6					2.60
10		440	9.9					2.50
11		440	10.1					2.50
12		440	10.2					2.50
13		440	10.2					2.50
14		440	10.1					2.50
15		440	10.3					2.50
16		440	10.1					2.50
17		440	10.0					2.50
18		440	9.8					2.50
19		440	9.4					2.50
20		(440)	(9.6)					(2.50)
21		400	8.6					2.60
21:30		(400)	(8.2)					(2.60)
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 48

Kodaikanal, India (10.2°N, 77.5°E)								
December 1955								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	7.6						3.1
01	240	7.2						3.1
02	240	6.7						3.2
03	240	5.4						3.2
04	240	4.2						3.3
05	245	3.0						3.3
06	280	4.6						3.0
07	250	7.9	240	---	110	2.4	6.0	3.0
08	280	9.8	225	---	105	2.9	8.0	2.8
09	300	10.5	215	---	105	---	9.0	2.6
10	310	10.1	205	---	105	---	11.0	2.5
11	320	9.7	205	---	105	---	11.0	2.5
12	340	9.8	200	---	---	---	11.6	2.4
13	310	10.3	200	---	---	---	11.8	2.4
14	(340)	10.0	200	---	105	---	11.0	2.4
15	---	10.2	200	---	105	---	10.0	2.4
16	235	10.3	---	---	110	2.8	7.6	2.4
17	260	10.2			120	2.2	3.8	2.5
18	290	9.6						2.5
19	340	8.9						2.4
20	320	8.7						2.5
21	300	8.5						2.7
22	260	8.4						2.9
23	250	7.9						3.0

Time: 75.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 49

Townsville, Australia (19.3°S, 146.7°E)							
December 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	>11.0					3.1 2.95
01	250	>10.6					3.2 (3.0)
02	260	>9.5					3.2 ---
03	260	8.4					3.2 (3.0)
04	250	8.3					3.2 (2.95)
05	250	6.8					3.0 3.0
06	240	>6.3			125	2.1	3.1 3.2
07	250	7.6	225		100	2.7	4.2 3.1
08	320	8.2	210	4.9	100	3.2	5.6 3.0
09	310	9.1	210	5.1	100	3.5	5.7 2.7
10	340	>10.4	200	5.2	100	3.7	5.8 2.8
11	340	11.3	190	5.4	100	3.8	6.0 2.7
12	350	11.8	200	5.3	100	3.8	5.8 2.8
13	340	12.4	---	5.4	100	3.8	5.7 2.8
14	330	12.4	215	5.2	100	3.7	4.7 2.8
15	320	12.2	220	5.0	100	3.6	4.9 2.8
16	310	11.9	230	4.8	100	3.3	5.3 2.9
17	280	11.3	250	4.5	100	2.9	4.4 (2.8)
18	260	>9.4	250	---	120	2.1	3.8 (3.0)
19	260	>9.0			---	---	3.6 ---
20	290	---			---	---	3.1 ---
21	300	>9.4					2.6 ---
22	300	>10.9					---
23	280	11.8					2.9 ---

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 51

Canberra, Australia (35.3°S, 149.0°E)							
December 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	---	7.6					3.8 2.8
01	---	7.0					3.7 2.9
02	---	6.6					3.5 2.8
03	---	(6.1)					3.6 (2.9)
04	<250	(5.4)					3.1 (2.8)
05	250	5.2	---	---	---	1.6	2.3 2.95
06	240	6.0	240	(4.0)	110	2.4	3.5 3.1
07	305	6.7	220	4.4	100	3.0	3.9 3.0
08	310	7.2	210	(4.7)	100	3.3	5.6 3.1
09	315	7.5	200	4.9	100	3.5	5.6 3.0
10	320	8.2	190	5.1	100	3.6	5.5 2.9
11	340	8.1	200	5.1	100	3.7	6.0 2.9
12	340	8.4	200	5.1	100	3.7	4.8 2.9
13	340	8.3	200	5.1	100	(3.7)	2.9
14	330	8.2	200	5.0	100	3.8	2.9
15	325	8.3	210	5.0	100	3.6	2.9
16	310	8.2	220	4.7	100	3.4	3.7 2.9
17	305	8.1	230	4.5	110	3.0	4.0 3.0
18	280	8.3	---	---	110	2.5	4.2 3.0
19	(240)	7.6					4.1 3.05
20	---	7.4					3.9 (2.9)
21	---	7.5					4.2 (2.8)
22	---	7.4					4.1 2.7
23	---	7.4					4.1 2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 53

Delhi, India (28.6°N, 77.1°E)							
November 1955							
Time	*	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	320	3.2					3.00
01	320	3.2					3.00
02	320	3.2					3.00
03							
04	290	3.2					3.20
05	280	3.0					3.25
06	280	4.2					3.25
07	240	7.9					3.60
08	240	9.1					3.60
09	240	10.0					3.60
10	240	10.7					3.60
11	250	10.5					3.50
12	280	10.9					3.25
13	280	>11.8					3.25
14	280	12.6					3.25
15	270	12.6					3.30
16	240	11.6					3.60
17	240	>10.3					3.60
18	240	8.5					3.60
19	280	6.6					3.25
20	240	6.0					3.60
21	280	4.3					3.25
22	320	3.4					3.00
23	320	3.2					3.00

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 50

Brisbane, Australia (27.5°S, 153.0°E)							
December 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	8.9					3.4 2.8
01	250	8.5					3.6 2.9
02	260	7.6					3.2 2.8
03	275	7.2					3.0 2.8
04	260	6.9			---	---	2.5 2.8
05	250	6.9			130	1.7	2.0 3.0
06	240	7.0	230	---	110	2.4	4.0 3.0
07	290	7.7	230	4.6	110	3.0	5.1 2.9
08	335	8.0	210	5.0	110	3.3	6.0 2.7
09	330	8.5	200	5.2	110	3.6	5.7 2.7
10	340	9.8	205	5.3	110	3.8	5.5 2.7
11	330	10.8	210	5.4	110	3.8	5.6 2.7
12	330	10.6	210	5.4	110	3.8	5.5 2.7
13	330	10.9	210	5.3	110	3.8	5.1 2.7
14	320	10.9	220	5.2	110	3.7	4.2 2.7
15	300	10.6	230	5.0	120	3.5	4.3 2.8
16	300	9.8	230	4.6	120	3.2	4.4 2.8
17	280	9.5	240	4.2	120	2.7	4.3 2.8
18	260	9.0			---	E	4.0 2.8
19	255	8.9					2.9 2.7
20	275	8.7					2.8 2.7
21	300	8.7					4.0 2.7
22	300	9.0					3.7 2.7
23	280	9.0					3.5 2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 52

Hobart, Tasmania (42.9°S, 147.3°E)							
December 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	260	6.5					2.8
01	250	6.0					2.9
02	250	5.5					2.9
03	250	5.0					2.9
04	250	4.7					2.9
05	250	4.9			120	2.0	3.0
06	250	5.6			100	2.5	3.1
07	230	6.4			100	3.0	3.1
08	250	7.1	200	4.6	100	3.3	3.0
09	300	7.0	200	4.8	100	3.5	3.0
10	340	7.3	200	5.0	100	3.6	2.9
11	350	7.4	200	5.0	100	3.6	4.2 3.0
12	350	7.2	200	5.0	100	3.6	4.5 2.9
13	350	7.5	200	5.1	100	3.7	4.0 3.0
14	340	7.5	200	5.0	100	3.6	3.0
15	340	7.5	200	5.0	100	3.5	3.0
16	250	7.3	200	4.7	100	3.4	3.0
17	230	7.5	---	---	100	3.0	3.0
18	250	7.5			100	2.5	3.0
19	250	7.5			100	1.9	5.0 3.1
20	250	7.5					4.2 3.0
21	250	7.5					2.9
22	280	7.4					2.9
23	270	7.1					2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 54

Ahmedabad, India (23.0°N, 72.6°E)							
November 1955							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	275	4.6					2.80
01	290	4.6					2.85
02	265	4.9					3.10
03	240	5.1					3.40
04	220	3.8					3.60
05	250	2.7					3.15
06	260	3.6					3.15
07	240	7.4			120	1.8	4.0 3.45
08	250	10.0	230	4.1	110	2.6	4.1 3.40
09	250	11.0	225	4.4	107	3.0	4.2 3.35
10	255	11.6	220	4.7	105	3.2	4.0 3.30
11	250	11.3	220	4.8	105	3.4	6.0 3.10
12	275	12.4	230	4.9	105	3.5	4.0 3.00
13	280	13.6	225	4.9	105	3.4	3.8 2.95
14	280	14.4	225	4.8	105	3.3	3.8 3.05
15	265	>15.0	240	4.5	110	3.0	3.9 <3.10
16	250	>14.0	240	4.0	115	2.6	3.8 <3.15
17	230	14.9			---	1.9	3.4 3.25
18	210	14.0					2.4 3.30
19	210	12.4					3.20
20	220	11.1					3.10
21	210	9.5					3.25
22	225	6.4					3.20
23	250	5.0					2.90

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 55

Calcutta, India (22.9°N, 88.5°E)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.5						3.10
01	260	4.4						2.95
02	260	4.2						3.05
03	240	4.4						3.20
04	<220	3.2						3.40
05	<250	2.6						3.10
06	275	3.6						3.00
07	250	7.4			115	2.0		3.30
08	250	10.4	235	4.1	110	2.7		3.30
09	255	11.0	220	4.4	105	3.1		3.25
10	260	11.0	210	4.5	100	3.4		3.30
11	270	11.5	200	4.7	100	3.5		3.20
12	270	>11.5	200	4.7	100	3.5		3.15
13	285	12.0	200	4.7	100	3.5		3.10
14	280	12.0	210	4.6	100	3.2		3.10
15	270	11.7	225	4.5	100	3.0		3.15
16	250	11.5	240	4.1	100	2.7		3.30
17	240	11.2			110	2.0		3.40
18	220	11.0					2.3	3.50
19	200	10.5					2.1	3.45
20	225	10.2						3.35
21	210	10.1						3.40
22	220	9.1						3.25
23	230	5.2						3.10

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 56

Bombay, India (19.0°N, 73.0°E)

November 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	260	4.6						3.50
07	270	5.7						3.35
08:30	300	7.0						3.10
09	330	7.9						2.95
10	360	8.6						2.80
11	390	9.8						2.65
12	390	10.6						2.65
13	400	11.3						2.60
14	420	11.9						2.55
15	390	11.6						2.65
16	360	10.7						2.80
17	360	10.0						2.80
18	330	9.4						2.95
19	330	8.1						2.95
20	(300)	(6.8)						(3.10)
21	270	6.0						3.35
22	270	5.0						3.35
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 57

Madras, India (13.0°N, 80.2°E)

November 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	>7.5						3.00
07	360	>9.1						2.80
08	(340)	9.8						(2.90)
09	---	>11.7						---
10	---	>9.5						---
11	---	>10.8						---
12	---	>11.4						---
13	(440)	>11.3						(2.50)
14	---	>12.1						---
15	---	>11.5						---
16	---	>11.9						---
17	---	---						---
18	---	>11.5						---
19	---	---						---
20	(360)	9.6						(2.80)
21	(320)	>9.5						(3.00)
22								
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 58

Tiruchy, India (10.8°N, 78.8°E)

November 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	6.3						3.00
07	360	9.2						2.80
08	400	9.8						2.60
09	440	10.2						2.50
10	440	10.2						2.50
11	480	10.2						2.30
12	480	10.2						2.30
13	440	10.3						2.50
14	440	10.2						2.50
15	440	10.4						2.50
16	440	10.4						2.50
17	440	10.0						2.50
18	400	9.7						2.60
19	400	9.5						2.60
20	(400)	(9.1)						(2.60)
21	400	8.8						2.60
21:30	---	---						---
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 59

Kodaikanal, India (10.2°N, 77.5°E)

November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	8.8						3.2
01	240	8.4						3.25
02	230	7.6						3.4
03	235	5.9						3.4
04	235	4.8						3.4
05	235	3.4						3.4
06	260	5.7						3.2
07	245	8.8	235	---	110	2.6		3.1
08	275	10.5	220	---	105	3.0	8.0	2.8
09	280	10.7	210	---	105	---	9.0	2.6
10	300	10.8	200	---	105	---	10.3	2.5
11	300	10.5	200	---	105	---	10.8	2.5
12	300	10.6	200	---	105	---	11.0	2.5
13	300	10.9	200	---	105	---	10.9	2.5
14	(315)	10.9	205	---	105	---	10.5	2.5
15	(260)	10.6	215	---	105	---	9.1	2.5
16	240	10.7	230	---	110	2.7	7.0	2.55
17	260	10.7						2.6
18	300	10.4						2.5
19	330	9.6						2.5
20	320	9.8						2.5
21	295	9.7						2.7
22	260	9.0						3.0
23	245	8.7						3.15

Time: 75.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 60

Tananarive, Madagascar (18.8°S, 47.8°E)

November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.4					1.8	2.97
01	225	4.8					2.3	3.11
02	230	4.2					2.5	3.05
03	230	3.8					1.8	3.13
04	220	3.5						3.17
05	<230	3.1					1.8	3.17
06	---	4.9	225	---	113	1.85		3.36
07	270	5.8	220	(3.95)	105	2.50	3.0	3.23
08	290	6.2	210	4.20	105	2.90	3.4	3.06
09	305	7.0	210	4.40	105	3.15	3.6	2.94
10	310	7.4	210	4.45	105	3.30	3.6	2.94
11	320	8.0	210	4.55	103	3.45	3.6	2.84
12	305	8.8	210	4.50	105	3.50	3.7	2.93
13	295	8.8	205	4.45	105	3.40	3.7	2.98
14	300	8.6	220	4.40	105	3.25	3.4	2.95
15	280	8.6	210	4.25	104	3.10	3.4	3.00
16	280	8.4	220	4.05	107	2.80	3.3	2.98
17	270	8.6	220	(3.65)	109	2.30	3.3	3.00
18	---	8.5	240	---	---	---	3.0	3.05
19	230	8.3					2.5	3.06
20	220	7.8					2.4	3.14
21	220	6.6					2.2	3.10
22	240	5.7					2.0	3.01
23	260	5.4					2.0	2.90

Time: Local.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

TABLE 61
IONOSPHERIC DATA

foF2, 0.1 Mc, DEC 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	01	F67	F62	60	58	F56	49	F48	67	106	125	139	140	135	135	130	128	120	118	107	97	U78	F68	F68	71
	02	70	73	F68	63	60	F56	56	72	110	135	140	U142	140	133	125	130	127	125	110	90	84	80	78	F73
	03	68	68	62	57	56	F50	49	62	98	122	136	140	136	138	135	127	124	118	110	U98	90	75	71	64
	04	66	69	73	62	52	F48	47	F64	103	127	126	139	135	137	135	134	128	120	110	100	78	74	71	72
	05	66	70	68	61	54	53	56	F70	110	125	135	131	128	133	134	135	130	119	107	U102	89	82	77	75
	06	66	60	58	58	57	54	50	64	108	128	135	135	134	135	136	130	125	118	107	98	85	78	71	64
	07	54	50	51	49	48	F47	F43	58	94	107	125	130	127	126	121	120	115	105	96	90	U76	66	66	F64
	08	F60	F58	U55	U49	U49	U49	U48	U61	101	116	130	133	135	135	131	126	122	117	108	95	78	73	66	F56
	09	F56	U52	U50	U52	U50	U43	U46	U67	95	118	125	132	135	135	132	127	120	116	104	92	U80	71	U68	F58
	10	F57	F62	U65	U62	U59	U57	U51	63	91	120	135	134	141	U145	138	133	128	U122	U104	93	86	85	78	68
	11	67	F60	U30	F31	F33	U37	U42	63	107	126	132	137	136	U135	127	123	117	102	95	91	U80	70	59	F53
	12	49	49	F48	49	47	39	39	55	92	117	130	134	130	126	125	132	126	120	107	105	U102	92	92	F84
	13	74	F68	66	64	54	F47	U45	62	92	114	122	128	132	136	132	125	116	112	U102	90	78	F63	62	F63
	14	F57	59	59	54	54	51	47	58	92	120	129	131	133	130	130	128	125	110	99	90	74	68	63	F58
	15	55	54	56	57	57	54	54	64	105	122	128	137	134	132	130	127	123	114	107	92	84	67	57	F57
	16	F56	56	F54	U54	F53	52	F49	58	94	117	133	131	135	135	130	131	122	113	105	90	75	66	56	47
	17	48	48	50	50	50	46	47	54	92	121	128	130	131	134	135	126	126	105	93	84	84	U66	U53	49
	18	46	47	48	52	49	47	45	F53	91	120	125	127	131	130	127	128	125	U117	U107	96	82	70	60	U56
	19	52	48	F47	48	F43	39	F41	54	90	109	123	130	129	125	120	126	120	109	97	82	75	62	58	55
	20	52	51	51	52	53	52	49	62	105	110	127	136	131	130	126	127	120	113	99	86	U72	U60	U53	52
	21	47	48	49	47	45	43	40	47	84	102	114	129	132	126	125	123	115	108	96	82	68	58	52	51
	22	50	48	52	53	53	44	42	50	88	110	126	141	145	135	133	128	124	117	94	93	73	66	55	50
	23	49	47	44	47	44	43	43	51	88	112	121	123	126	118	118	122	115	105	94	80	69	59	57	54
	24	54	56	58	62	57	47	U42	52	82	114	120	127	131	126	120	123	120	116	100	90	74	60	63	56
	25	51	46	C	C	C	C	U43	58	84	120	135	140	145	135	130	129	133	130	120	119	90	72	F66	F65
	26	F57	F52	F49	F48	F45	F42	U48	U62	94	115	130	130	136	130	130	122	120	114	98	89	77	F60	F55	50
	27	50	F49	F48	48	50	F48	F43	F48	78	114	124	130	130	123	124	125	128	127	110	90	U82	U72	U60	U64
	28	U33	U52	U60	U47	U48	U46	U50	56	85	118	114	130	137	132	130	125	118	108	94	92	80	70	F66	F61
	29	63	66	68	63	58	48	F52	60	93	115	114	125	126	126	117	124	120	107	91	88	69	F64	60	55
	30	51	47	U52	37	35	33	F36	F48	92	115	125	132	135	128	130	132	126	123	U107	98	U73	70	70	58
	31	F58	62	65	53	47	43	U43	50	92	115	125	137	140	135	132	129	122	125	116	100	88	74	55	53
MED		56	54	54	52	51	47	47	58	92	117	127	132	134	133	130	127	122	116	104	92	78	70	63	58
NO		31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 62
IONOSPHERIC DATA

foF2, 0.1 Mc, Dec. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	
01	62	F	F	58	56	53	F	49	85	116	131	139	140	135	136	130	127	119	117	105	86	73	67	70	74
02	72	70	63	61	58	56	F	62	87	120	135	148	140	134	125	128	130	125	120	100	90	80	74	78	70
03	68	64	58	58	56	50	F	47	80	120	130	140	143	138	137	135	125	125	115	106	95	79	73	68	65
04	68	71	71	57	49	47	F	48	90	120	127	140	137	136	135	130	130	116	105	92	79	72	73	70	
05	70	68	63	58	52	53	F	59	92	123	133	135	133	132	132	135	135	126	116	104	92	83	80	74	70
06	63	59	58	58	56	51	F	52	87	120	132	133	135	135	135	132	128	125	114	104	92	84	76	68	59
07	52	F	U F	F	49	48	F	45	77	103	115	125	130	127	123	125	118	112	105	94	76	72	66	67	60
08	59	57	51	48	48	48	F	49	80	110	123	131	135	136	132	126	125	117	113	98	87	75	70	62	56
09	53	50	51	51	48	46	F	51	78	111	119	125	132	134	133	130	125	119	108	94	82	73	69	66	54
10	58	61	61	58	58	56	F	56	80	110	125	134	135	144	140	136	133	125	114	98	92	86	84	76	68
11	63	56	33	31	34	39	F	48	88	117	129	136	140	135	135	127	120	107	99	93	85	78	63	57	52
12	50	49	48	48	44	38	F	39	78	120	123	128	130	130	128	128	130	126	117	104	98	94	92	88	76
13	69	64	65	60	53	47	F	50	76	110	122	125	128	137	136	136	123	115	97	96	84	72	62	62	64
14	58	60	55	54	54	48	F	49	76	108	125	132	133	130	130	127	123	115	111	92	86	70	65	61	56
15	56	51	58	55	56	55	F	54	82	115	135	128	137	139	130	128	126	120	108	92	88	76	62	56	59
16	56	53	54	53	54	48	F	52	75	107	125	133	139	127	130	131	126	116	107	100	79	73	58	54	49
17	48	49	50	50	48	47	F	47	76	105	125	130	135	134	132	131	123	116	103	88	78	76	57	48	45
18	45	46	50	50	47	45	F	44	74	106	120	127	132	128	131	128	125	123	115	96	88	77	66	57	55
19	51	48	48	46	39	38	F	42	73	103	120	128	130	124	123	127	126	116	102	88	78	68	56	57	53
20	49	52	51	62	53	55	F	54	80	100	125	130	129	132	124	130	128	117	108	99	72	70	59	51	52
21	50	47	48	47	47	41	F	40	66	100	107	115	133	131	125	120	120	110	100	88	74	61	54	52	48
22	48	50	52	53	50	41	F	43	72	107	116	135	139	136	130	130	125	120	106	94	84	69	58	51	50
23	47	47	46	45	44	42	F	44	71	103	118	126	126	125	118	118	118	108	100	88	73	62	57	56	53
24	54	58	60	57	52	46	F	45	72	105	114	123	129	126	125	119	122	122	108	96	78	61	61	61	53
25	49	C	C	C	C	44	F	48	69	102	103	138	143	142	130	130	120	135	128	118	96	79	70	64	62
26	58	52	52	48	41	47	F	56	80	110	128	126	135	132	128	123	125	116	100	92	87	69	53	54	52
27	48	47	48	48	49	46	F	41	71	107	120	128	128	124	120	125	124	131	126	101	87	82	70	68	F
28	39	61	59	47	47	48	F	50	68	102	113	124	130	137	130	128	122	114	107	94	90	72	64	61	64
29	63	67	60	63	55	49	F	53	72	102	115	120	122	127	121	119	119	115	101	90	87	72	62	56	56
30	50	47	41	32	36	35	F	36	71	100	122	127	132	130	130	133	128	123	119	105	90	72	63	59	58
31	60	64	59	51	44	43	F	43	68	108	120	125	142	140	132	127	127	127	118	101	91	80	62	56	54
MED	56	54	53	52	49	47	F	48	76	108	123	128	133	134	130	128	125	119	108	96	87	73	64	61	56
NO	31	30	30	30	30	31	F	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30

TABLE 63
IONOSPHERIC DATA

foF1, 0.1 Mc, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Lang. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01										Q	Q	L	L	L	L	L	L	Q						
02										Q	Q	L	L	L	L	L	L	Q						
03										Q	L	L	L	L	L	L	L	L						
04										Q	L	L	L	L	L	L	L	L	L					
05										Q	L	L	L	L	L	L	L	L	Q					
06										Q	Q	L	L	L	L	L	L	Q						
07										Q	L	L	L	L	L	L	L	L						
08										Q	Q	Q	L	L	L	L	L	L						
09										Q	Q	L	L	L	L	L	L	L						
10										Q	L	L	L	L	L	L	L	L						
11										Q	Q	L	L	L	L	L	L	Q						
12										Q	L	L	L	L	L	L	L	Q						
13										Q	L	L	L	L	L	L	Q	Q						
14										Q	L	L	L	L	L	L	L	L						
15										Q	Q	L	L	L	L	L	L	L						
16										Q	Q	L	L	L	L	L	L	L						
17										Q	L	L	Q	L	L	L	Q	Q						
18										Q	Q	Q	Q	L	L	L	Q	Q						
19										L	L	L	L	L	L	L	L	L						
20										Q	Q	Q	L	L	L	L	L	Q						
21										Q	Q	Q	L	L	L	L	Q	Q						
22										L	L	L	L	L	L	L	L	Q						
23										Q	Q	Q	L	L	L	L	Q	Q						
24										Q	Q	L	L	L	L	L	L	Q						
25										Q	L	L	L	L	L	L	L	Q						
26										Q	Q	L	L	L	L	L	L	L						
27										Q	Q	Q	Q	Q	L	L	L	Q						
28										Q	Q	L	L	L	L	L	L	L						
29										Q	Q	L	L	L	L	L	L	L						
30										Q	Q	L	L	L	L	L	L	L						
31										Q	Q	L	L	L	L	L	L	L						
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 64
IONOSPHERIC DATA

foE, 0.1 Mc, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
									B	H	H	H				H	A							
01									300	340	350	350	360	330	290		B							
									A	H	I B	H												
02									320	340	350	370	350	340	300		B							
									H						H	H								
03									240	300	330	350	350	370	330	310		B						
									H	H	H													
04									230	300	340	350	370	370	340	300		B	B					
									A	A		A		H	H									
05									320				350	360	340	300	220		S					
									B	B							H							
06											330	350	350	360	330	280	220							
									A		H			U P			A							
07									290	320	340	350	350	330										
									B	U B	B	B	B	U B		B	B							
08									260					330	320									
									220	290	330	340	340	U P	320	290	A							
09									B	U F				U P	H	B	B							
									280	310	320		340	340	320									
10									A	H			U A				A							
									290	330	350		370	350	320	280								
11									H		A						U P							
									210	290			350	330	300	280	190							
12									H		U S		U P		U P		A							
									230	280	310	330	360	330	310	290								
13									H					H	A	A	H							
									200	290	310	330	350	340			220							
14									H	H	H	H					A							
									200	270	320	340	330	340	330	300								
15													H			A	A							
									220	290	340	340	340	350	330									
16									H	U H	I B	H				H	H							
									240	300	330	350	370	340	310	280	240							
17									U H	I A				U A	H	U H	B							
									210	260	310	330	340	330	310	290								
18									H	H														
									220	300	350	360	350	340	320	280	190							
19									H		A	U R	U R	H	H	H	H							
									210	270		340	360	330	320	280	230							
20									H	I A						H	A							
									200	260	320	330	360	340	320	300								
21									A	A	A			H	I A	H	A							
												330	340	330	310	290								
22									H					I A		H								
									220	290	320	340	340	320	300	290	240							
23									H	A	A			A	A	A	H							
									210			330	340				230							
24									U B	A	A	U A			I A									
									190			330	330	320	300	290	230							
25									B		I B				H									
									270	300	320	320	340	320	300	230								
26									B		U A	U B				H								
									280	320	350	360	340	320	290	230								
27									H		A	A	A	A		U B								
									230	290					310	280	250							
28									U P					H		H	H							
									180	280	320	320	330	330	290	290	240							
29									A		H	I A				I A	H							
									270	330	340	350	360	330	280	240								
30									H		I A				A	A	A							
									240	290	330	360	380	370										
31																								
									220	290	320	340	350	340	320	290	230							
MED																								
									19	26	24	27	29	29	28	24	15							
NO																								

TABLE 65
IONOSPHERIC DATA

fEs, 0.1 Mc, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
	01	44	33	B	S	48	116	30	29	27	G	G	25	G	G	G	56	30	B	S	36	45	33	30	S	
	02	S	S	S	S	15	32	120	H	H	33	B	34	41	G	G	G	B	B	S	68	S	S	31	40	
	03	S	S	S	S	S	S	S	48	23	G	G	G	39	G	G	G	29	B	S	S	S	33	S	28	
	04	39	26	S	E	S	S	S	42	39	22	G	G	23	45	34	37	25	B	S	B	S	S	33	S	
	05	B	S	S	S	B	S	30	17	28	39	G	68	33	G	G	G	24	S	S	49	38	38	39	33	
	06	39	B	B	30	S	S	31	74	B	B	G	42	G	G	G	G	17	B	S	38	39	34	30	30	
	07	35	S	S	S	S	S	27	S	22	G	G	G	32	42	39	G	30	S	B	B	43	40	S	31	
	08	38	68	S	S	S	39	S	43	B	B	B	B	B	B	B	B	B	B	S	S	S	S	S	S	
	09	S	S	S	S	S	34	H	43	43	17	G	G	G	G	G	G	24	B	S	53	S	29	S	S	
	10	S	45	S	S	S	S	S	B	B	F	32	32	54	38	G	G	B	24	B	S	S	S	S	S	
	11	S	S				S	S										25				48	S	S		
	12	S	S	62	41	37			48	34	44	58	80	58	74	61	52	36	20	35	32	40			45	
	13	S	S	49	50	44	S	S	48	22	37	53	43	G	28	24	29	G	B	S	S	34	40	S	B	
	14	S	S	42	S	S	S	62	39	74	39	32	44	G	34	G	G	21	30	36	S	S	S	S	S	
	15	S	S	S	38	43	S	S	S	G	G	G	G	37	45	40	36	G	S	S	S	23	S	S	S	
	16	S	39	S	S	S	S	S	S	G	G	116	G	37	39	34	31	29	B	35	28	S	S	S	23	
	17	B	S	S	S	S	S	S	35	G	48	G	G	68	48	54	34	G	B	B	S	S	S	S	24	
	18	S	S	S	S	S	S	S	S	G		G	G	G	G	G	G	G	B	S	S	S	31	S	S	
	19	S	S	S	S	S	S	S	S	G	44	G	G	G	36	36	48	65	39	S	S	S	S	S	S	
	20	S	35	S	72	35	S	37	37	G	36	H	38	G	56	36	G	39	33	38	43	S	35	29	S	S
	21	S	S	S	S	S	27	26	S	G	G	37	G	G	G	G	G	34	B	S	S	23	23	S	S	
	22	24	S	S	S	Y	S	24	28	G	Y	G	G	G	G	G	32	23	B	S	31	34	42	S	S	
	23	S	S	Y	S	S	S	S	S	Y	30	47	32	35	41	49	43	36	23	29	S	38	39	S	S	
	24	S	S	S	S	S	S	S	S	39	G	G	45	36	42	33	G	G	S	S	S	S	S	50	28	
	25	S	S	S	S	E	37	S	S	G	40	Y	71	45	50	52	41	Y	Y	S	S	S	S	S	S	
	26	26	39	C	C	C	C	84	72	G	29	40	35	50	44	33	G	G	24	21	29	B	S	S	S	
	27	S	70	72	80	35	S	S	34	32	28	B	G	G	G	G	29	G	B	B	B	30	31	26	S	
	28	B	S	E	S	S	S	S	S	B	G	G	Y	B	G	G	37	G	S	41	70	S	S	S	B	
	29	S	S	S	S	S	S	B	B	G	84	39	34	34	32	G	G	G	B	B	B	B	B	S	S	
	30	S	S	S	S	S	S	35	S	G	29	G	33	34	G	32	G	G	S	S	S	S	S	S	S	
	31	S	S	S	E	S	S	S	25	30	42	G	41	34	G	G	30	G	B	S	S	S	40	52	S	
MED		30	U	U	U	40	36	U	34	31	40	29	31	31	31	31	31	31	31	31	31	31	U	31	28	
NO		10	9	8	8	10	7	13	18	31	31	31	31	31	31	31	31	31	24	11	16	16	15	9	11	

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 67
IONOSPHERIC DATA

h'F2, Km, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	01	270	250	250	250	300	270	260	260	230	230	L	L	L	L	L	L	240	230	230	240	240	280	300	300
	02	260	250	240	250	250	250	280	240	240	240	L	L	U L	L	L	L	240	220	220	220	240	260	260	240
	03	250	240	250	270	250	230	240	250	230	240	L	L	L	L	250	L	L	240	240	230	230	240	270	280
	04	300	260	250	230	230	240	250	260	230	L	250	240	L	L	L	L	L	L	240	240	230	270	280	250
	05	260	250	250	260	280	280	260	240	230	240	L	L	L	L	L	L	L	230	220	240	230	250	260	250
	06	250	270	300	290	260	250	260	260	230	230	L	L	L	L	L	U L	250	230	250	230	240	220	240	240
	07	250	260	260	260	250	260	250	250	230	250	L	L	L	L	L	L	250	240	240	240	240	250	260	260
	08	250	260	260	260	290	300	300	260	230	235	230	L	L	L	250	L	L	230	220	230	230	230	240	230
	09	270	260	280	270	250	250	260	260	230	230	L	260	260	L	L	L	260	230	230	240	230	250	240	290
	10	350	330	310	300	280	270	230	280	230	L	L	L	L	L	L	L	240	240	250	220	220	240	240	230
	11	250	260	300	280	280	270	290	250	230	230	L	L	L	L	L	L	230	220	250	230	240	230	240	240
	12	260	260	270	270	250	250	280	270	230	230	250	L	U L	L	L	L	240	240	240	230	250	230	250	250
	13	260	260	240	240	250	280	270	260	230	230	230	250	L	240	250	240	230	230	240	240	220	220	260	250
	14	250	270	260	280	270	240	260	250	230	240	240	230	250	L	L	L	250	220	220	230	230	240	250	250
	15	270	300	320	290	270	250	250	250	240	220	L	L	L	L	U L	250	L	230	230	240	230	230	250	270
	16	280	290	300	280	270	250	230	240	230	220	U L	250	L	240	L	L	240	240	230	220	230	220	230	240
	17	300	300	290	270	270	240	250	240	230	240	240	230	L	260	250	230	230	210	220	220	250	230	230	270
	18	280	290	290	270	250	240	250	240	230	240	230	230	L	240	U L	240	230	U A	240	230	220	220	230	230
	19	250	250	250	240	240	250	280	250	240	240	240	L	L	L	L	L	250	220	240	230	240	230	260	250
	20	270	290	310	300	290	260	240	250	240	230	240	240	L	L	L	250	230	210	220	220	240	240	260	260
	21	250	260	270	260	240	250	260	240	220	220	230	280	L	L	L	250	230	240	220	230	230	250	270	260
	22	290	330	310	290	240	220	270	250	L	L	260	L	260	250	L	240	220	230	230	230	220	240	240	260
	23	260	260	260	280	270	250	270	240	230	230	230	L	L	230	L	250	240	240	230	220	240	260	280	280
	24	290	290	290	260	250	230	260	270	230	230	250	L	L	U L	260	240	L	240	220	210	240	240	250	260
	25	240	270	C	C	C	C	A	260	250	260	L	250	L	270	260	L	250	230	230	230	230	240	260	280
	26	300	320	320	310	300	290	260	240	230	230	240	240	240	L	L	L	L	220	240	240	230	220	260	250
	27	270	280	270	270	250	230	230	230	230	230	230	230	240	L	L	L	250	230	230	230	230	250	240	270
	28	300	260	240	240	330	300	300	230	240	240	240	260	L	L	L	L	L	240	220	240	240	220	270	260
	29	290	280	270	250	230	240	270	250	240	230	240	240	L	L	250	L	L	220	240	230	220	220	230	270
	30	250	230	240	260	300	250	270	250	220	230	L	L	L	L	L	L	250	230	210	230	210	230	250	270
	31	270	250	240	230	230	260	260	240	230	220	240	250	L	L	L	L	L	230	270	240	250	230	240	260
MED		260	260	270	270	260	250	260	250	230	230	240	240	U 250	U 250	U 250	U 240	240	230	230	230	230	240	250	260
NO		30	31	30	30	30	30	30	31	30	28	19	14	8	8	8	9	22	30	31	31	31	31	31	30

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 68
IONOSPHERIC DATA

h'F₁, Km, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
									Q	Q							Q							
01									Q	Q	225	230	220	230	230	250	Q							
02									Q	Q	220	230	235	230	230	230	Q							
03									Q		230	220	230	230	240	230	230	230						
04									Q		210	220	220	220	230	230	230	225	240					
05									Q		220	230	230	220	230	225	230	230	Q					
06									Q	Q	220	220	230	230	230	230	Q							
07									Q		220	220	225	230	230	225	235	230						
08									Q	Q	Q		230	230	230	230	230	235						
09									Q	Q	230	225	220	230	230	230	245							
10									Q		225	220	230	230	220	240	230	220						
11									Q	Q	U A	230	230	220	U A	U A	225	Q						
12									Q		220	230	220	235	225	230	230	Q						
13									Q		225	225	230	225	225	230	Q	Q						
14									Q		225	220	230	220	235	220	220	230						
15									Q	Q	215	215	220	235	235	230	230							
16									Q		225	230	205	240	220	240	235	Q						
17									Q	225	225	Q	225	220	240	Q	Q							
18									Q	Q	Q	Q	220	210	225	Q	Q							
19									215	220	220	220	240	215	215	220	230							
20									Q	Q	Q	230	220	230	235	240	Q	Q						
21									Q	Q	Q	210	240	235	225	Q	Q							
22									235	230	230	225	225	230	230	230	Q	Q						
23									Q	Q	Q	215	215	220	225	Q	Q							
24									Q	Q	230	220	245	220	220	235	Q							
25									Q		240	230	235	230	230	245	Q							
26									Q	Q	U B	235	230	210	225	230	230	230						
27									Q	Q	Q	Q	Q	230	235	230	Q							
28									Q	Q	230	235	220	225	230	245	235							
29									Q	Q	215	230	220	230	230	230	235							
30									Q	Q	220	220	225	225	230	240	230							
31									Q	Q	225	235	230	240	230	225	230							
MED											225	225	230	225	230	230	230							
NO									2	12	25	28	30	31	31	26	16	1						

TABLE 69
IONOSPHERIC DATA

h¹E, Km, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 387°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01									B	H	H	H	115	119	119	121	A							
02									A	U A	B	A	U A	121	109	117	119	B						
03									U A	109	103	101	109	109	109	H	H	B						
04									A	H	H	H	115	121	119	119	B	B						
05									A	A	111	A	119	115	119	115	119	S						
06									B	B	111	111	111	119	115	111	H							
07									A	109	105	103	117	121	117	119	A							
08									B	U B	B	B	B	B	U B	B	B							
09									125	121	111	115	115	109	111	119	A							
10									B	101	111	109	111	119	113	B	B							
11									A	H	103	125	105	109	111	111	A							
12									H	U A	A	A	H	U A	109	115	119							
13									109	119			101	109	109	H								
14									119	109	111	109	105	105	109	111	119							
15									121	105	109	109	109	109	A	A	105							
16									121	H	H	H	H	115	111	111	109							
17									121	109	109	109	109	109	109	109	A							
18									H	H	I B	H	H	110	109	109	H							
19									109	109	109	105	101	110	109	109	119	B						
20									E S	I A	105	103	109	107	105	109								
21									119	112														
22									H	U A														
23									111	101	119	115	109	109	109	109	109							
24									H	110	A		109	100	109	111	109	H						
25									109	110								A						
26									H	I A	109	122	110	110	109	110								
27									A	A	A			H	U A	U A								
28									U A	H		109	109	109	109	111	119							
29									121	109	105	101	103	101	105	109	129							
30									H	A	A		109	A	A	A	H							
31									121	109	109	109	109	109	109	111	119							
32									121	109	109	109	109	109	109	111	119							
33									B	I B	109	109	109	109	103	111	119							
34									113	111	109	109	109	109	103	111	119							
35									B	E B	I A	E B												
36									119	113	113	113	109	111	109	113								
37									H	U A						U B								
38									121	119	111	111	111	113	111	111	131							
39									125	113	117	109	109	109	111	115	111							
40									129	115	109	115	125	119	109	115	109							
41									H	I A					A	A	A							
42									121	111	119	124	129	129										
43									121	110	111	109	109	109	111	111	119							
44									19	26	25	27	29	29	28	26	18							

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 70
IONOSPHERIC DATA

(M 3000) F2, DEC. 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec.

Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
01	F 300	F 290		290	F 280	F 310	F 300	310	310	315	300	300	290	280	285	280	290	280	285	305	U F 295	255	F 270	260	
02	270	280		295	280	285	290	290	310	320	320	295	295	290	280	280	280	285	280	280	295	285	285	280	290
03	285	285	290	280	270	290	300	290	315	310	310	290	290	280	280	285	280	285	285	295	295	290	280	270	
04	270	280	295	310	290	290	F 290	F 310	F 320	290	270	305	285	280	280	280	280	280	290	290	295	285	260	295	
05	285	290	290	290	270	270	290	310	330	315	305	305	290	275	275	275	280	280	280	U P 280	290	295	295	300	
06	300	280	270	270	280	280	290	300	320	310	300	290	290	285	275	280	270	295	275	280	280	290	300	290	
07	300	280	295	295	290	280	290	290	310	320	290	285	290	280	280	285	285	285	290	290	U P 285	285	275	290	
08	280	275	270	280	265	265	265	290	310	320	300	295	290	290	290	280	280	280	285	295	300	280	300	280	
09	F 295	U F 290	U F 285	U F 290	U F 300	U F 280	U F 290	U F 295	320	315	305	300	290	280	285	275	295	290	295	300	U F 280	U F 290	U F 295	F 280	
10	F 250	U F 270	U F 265	U F 270	U F 280	U F 270	U F 285	290	325	320	305	290	285	285	285	285	280	U P 280	U P 285	285	265	285	290	300	
11	280	295	270	280	290	280	295	290	320	315	310	305	290	265	285	285	285	285	290	295	300	315	290	290	
12	295	290	280	290	290	265	285	290	320	310	310	300	290	280	275	275	275	285	275	280	U P 290	285	290	290	
13	280	270	290	290	280	280	280	290	310	300	290	290	285	285	290	280	280	290	290	295	280	295	275	280	
14	F 300	F 280	285	260	270	285	290	310	320	320	320	315	300	295	295	280	290	300	U P 300	290	310	F 295	F 290	F 280	
15	275	265	255	265	270	280	285	290	335	310	300	295	290	285	280	280	290	290	290	305	315	315	285	285	
16	F 275	270	270	280	290	295	305	310	330	320	325	300	305	295	280	290	300	295	285	305	300	295	300	300	
17	290	275	270	270	280	295	295	325	325	310	320	310	295	300	290	295	300	265	295	290	315	U F 320	U S 290	285	
18	280	275	280	285	285	295	290	310	330	330	315	290	295	295	290	290	285	U S 290	U S 290	U S 290	U S 310	U S 310	U S 290	300	
19	300	300	300	F 315	F 300	285	290	300	320	320	315	280	305	290	290	285	290	305	290	310	300	290	290	300	
20	280	275	260	270	270	280	305	310	335	325	320	305	295	295	290	290	305	290	300	300	290	U J 290	U J 285	290	
21	295	300	280	290	275	290	300	300	330	315	310	310	305	300	285	290	295	300	300	305	300	295	285	290	
22	270	255	265	275	290	290	275	310	330	325	315	285	300	305	295	300	290	295	310	310	310	295	280	290	
23	290	290	280	280	290	280	290	295	320	320	310	315	300	275	290	285	300	300	295	300	300	285	270	270	
24	270	270	270	275	285	300	270	285	300	320	320	310	300	275	275	270	285	280	290	280	285	270	265	270	
25	275	275		C	C	C	C	U A 310	290	290	305	300	300	290	290	270	270	275	290	295	295	290	280	270	
26	F 275	F 275	F 270	F 270	F 280	F 280	F 310	F 290	310	320	315	305	305	285	295	290	295	285	295	300	315	U S 300	U S 295	285	
27	290	280	290	290	295	290	300	295	325	315	315	300	300	285	270	270	275	280	285	290	280	280	275	270	
28	U F 280	U F 300	300	285	U F 260	U F 260	U F 280	F 320	315	310	295	300	290	280	270	270	290	285	285	280	F 290	F 280	F 280	F 270	
29	265	270	270	280	300	300	280	300	330	330	300	290	290	290	280	280	290	295	290	F 290	330	295	300	290	
30	310	300	295	290	280	290	290	295	320	325	310	290	280	280	280	280	285	280	S	300	U F 300	F 290	F 265	290	
31	F 280	285	295	320	295	295	300	285	310	330	305	295	290	275	265	280	280	285	290	290	300	295	300	290	
MED	280	280	280	280	280	285	290	295	320	320	310	300	290	285	280	280	285	285	290	295	300	290	285	290	
NO	31	31	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	

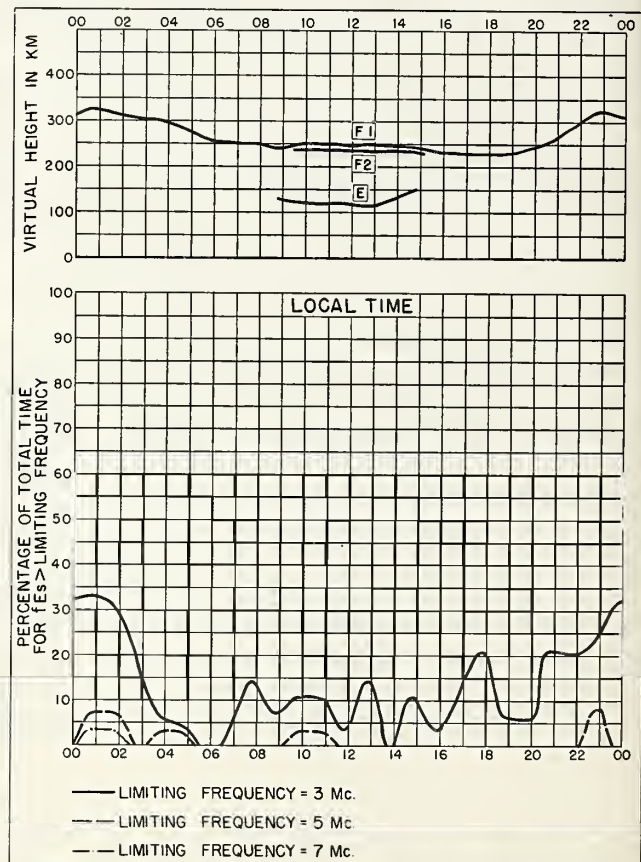
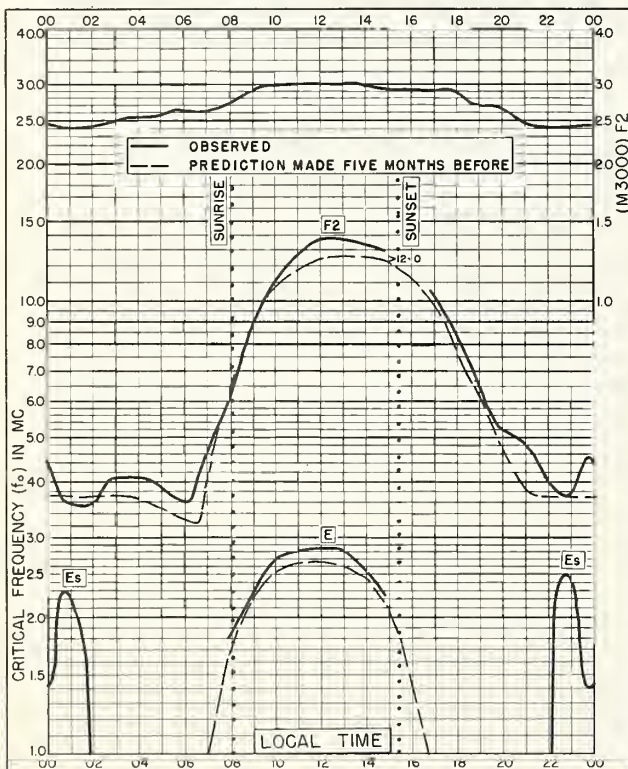
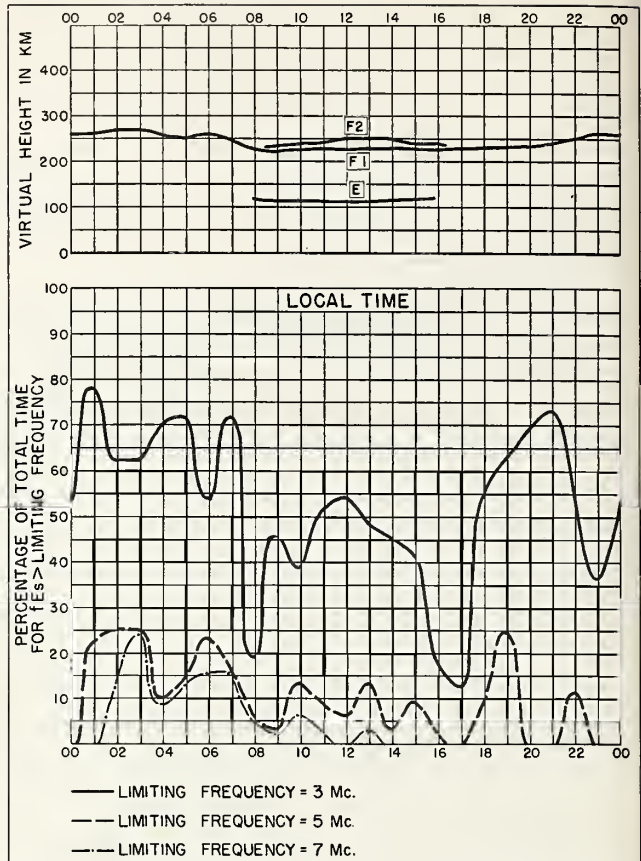
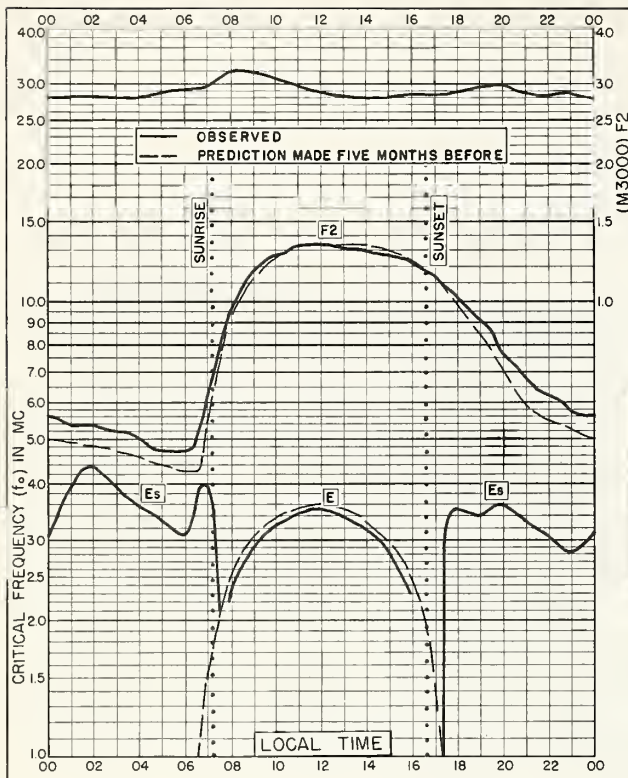
TABLE 71
IONOSPHERIC DATA

(M3000) F1, DEC 1956

75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01									Q	Q	L	L	L	L	L	L	Q							
02									Q	Q	L	L	L	L	L	L	Q							
03									Q	L	L	L	L	L	L	L	L							
04									Q	L	L	L	L	L	L	L	L	L						
05									Q	L	L	L	L	L	L	L	L	Q						
06									Q	Q	L	L	L	L	L	L	Q							
07									Q	L	L	L	L	L	L	L	L							
08									Q	Q	Q	L	L	L	L	L	L							
09									Q	Q	L	L	L	L	L	L	L							
10									Q	L	L	L	L	L	L	L	L							
11									Q	Q	L	L	L	L	L	L	Q							
12									Q	L	L	L	L	L	L	L	Q							
13									Q	L	L	L	L	L	L	L	Q	Q						
14									Q	L	L	L	L	L	L	L	L							
15									Q	Q	L	L	L	L	L	L	L							
16									Q	Q	L	L	L	L	L	L	L							
17									Q	L	L	Q	L	L	L	Q	Q							
18									Q	Q	Q	Q	L	L	L	Q	Q							
19									L	L	L	L	L	L	L	L	L							
20									Q	Q	Q	L	L	L	L	L	Q							
21									Q	Q	Q	L	L	L	L	Q	Q							
22									L	L	L	L	L	L	L	L	Q							
23									Q	Q	Q	L	L	L	L	Q	Q							
24									Q	Q	L	L	L	L	L	L	Q							
25									Q	L	L	L	L	L	L	L	Q							
26									Q	Q	L	L	L	L	L	L	L							
27									Q	Q	Q	Q	Q	L	L	L	Q							
28									Q	Q	L	L	L	L	L	L	L							
29									Q	Q	L	L	L	L	L	L	L							
30									Q	Q	L	L	L	L	L	L	L							
31									Q	Q	L	L	L	L	L	L	L							
MED																								
NO																								



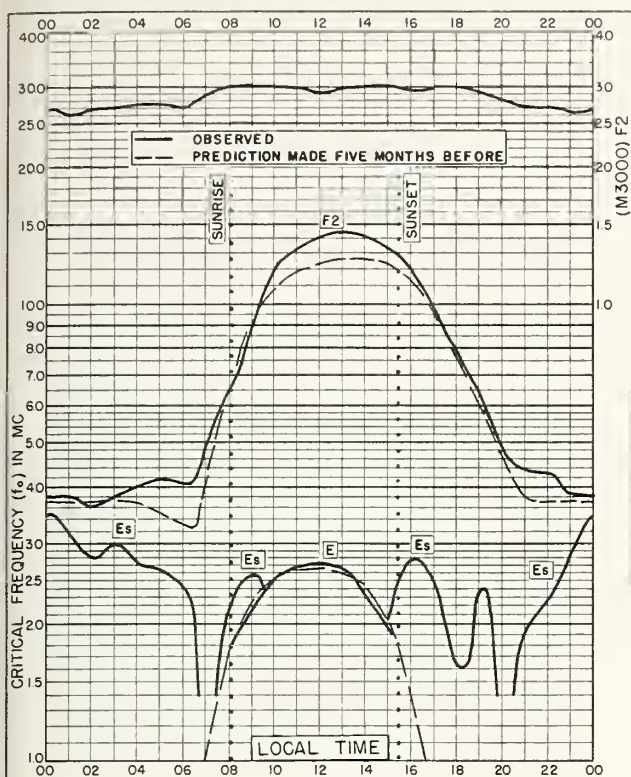


Fig. 5. UPSALA, SWEDEN
59.8°N, 17.6°E

NOVEMBER 1956

NBS 503

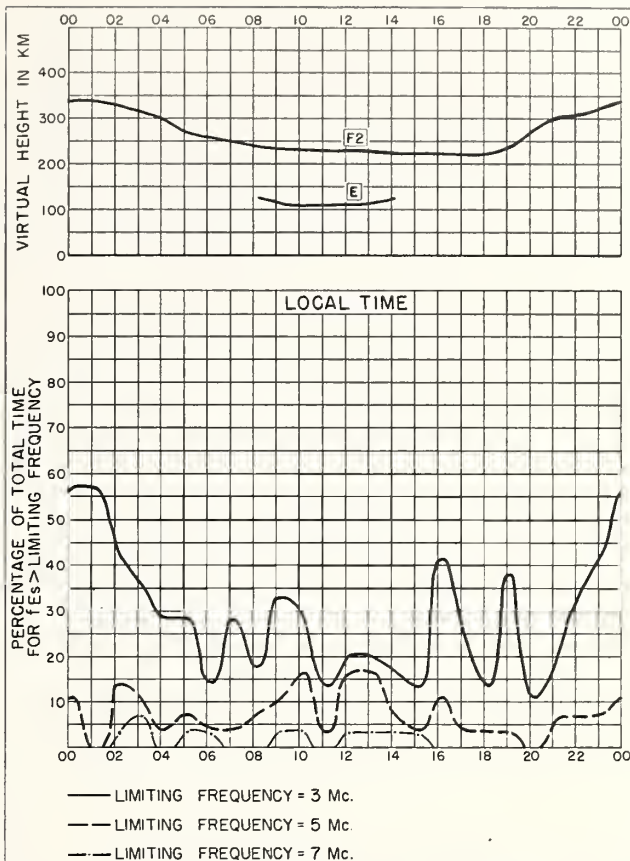


Fig. 6. UPSALA, SWEDEN

NOVEMBER 1956

NBS 490

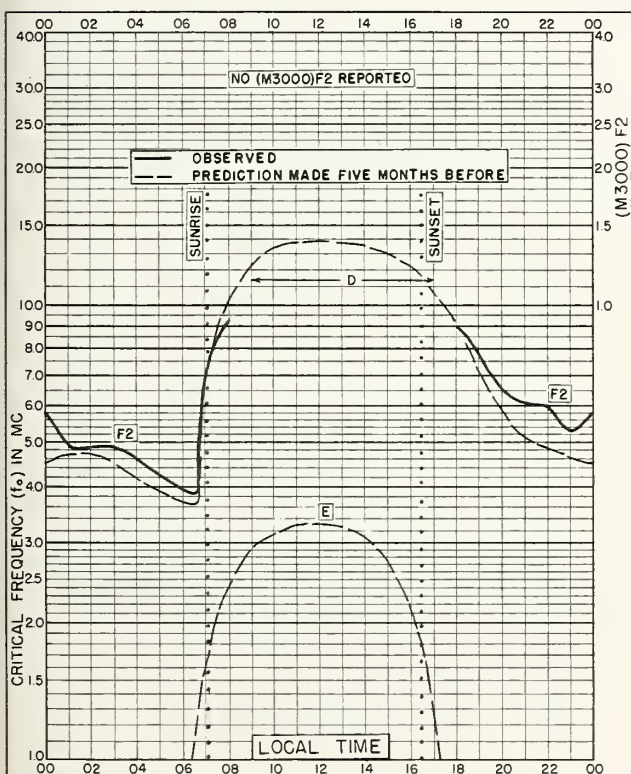


Fig. 7. GRAZ, AUSTRIA
47.1°N, 15.5°E

NOVEMBER 1956

NBS 503

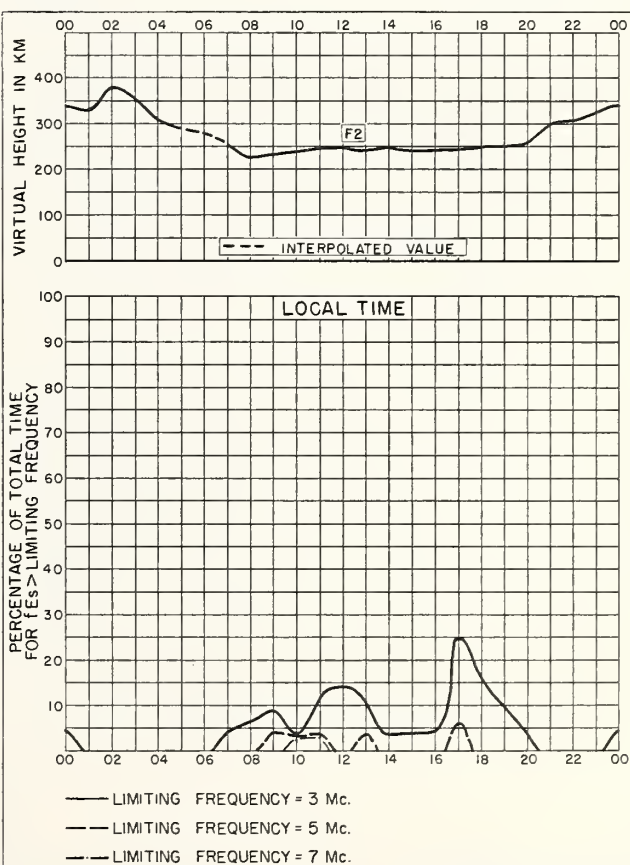


Fig. 8. GRAZ, AUSTRIA

NOVEMBER 1956

NBS 490

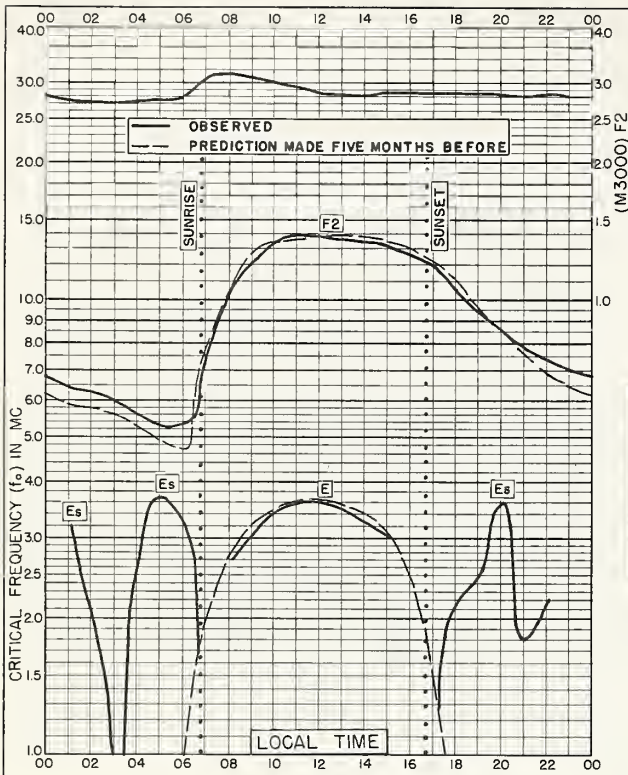


Fig. 9. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W
NOVEMBER 1956

NBS 503

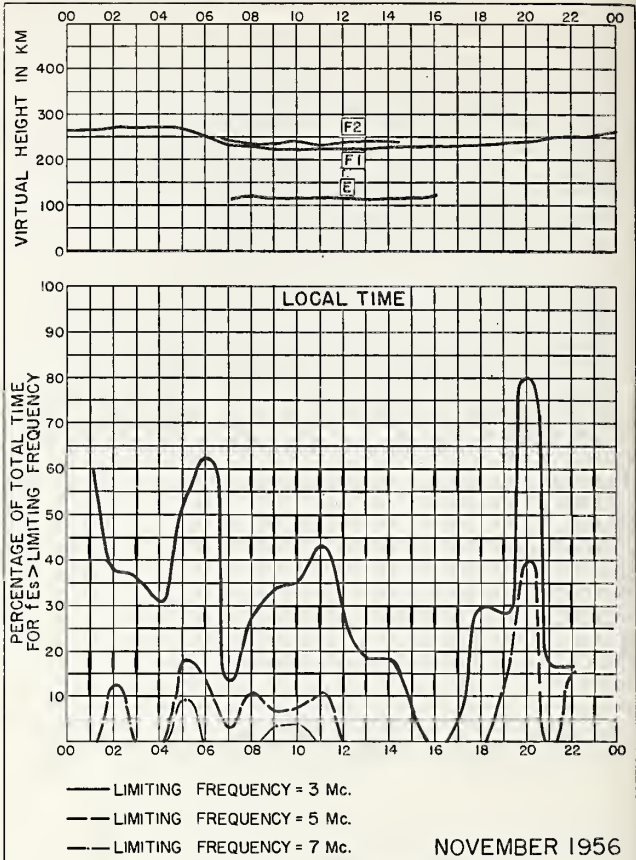


Fig. 10. FT. MONMOUTH, NEW JERSEY
NOVEMBER 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

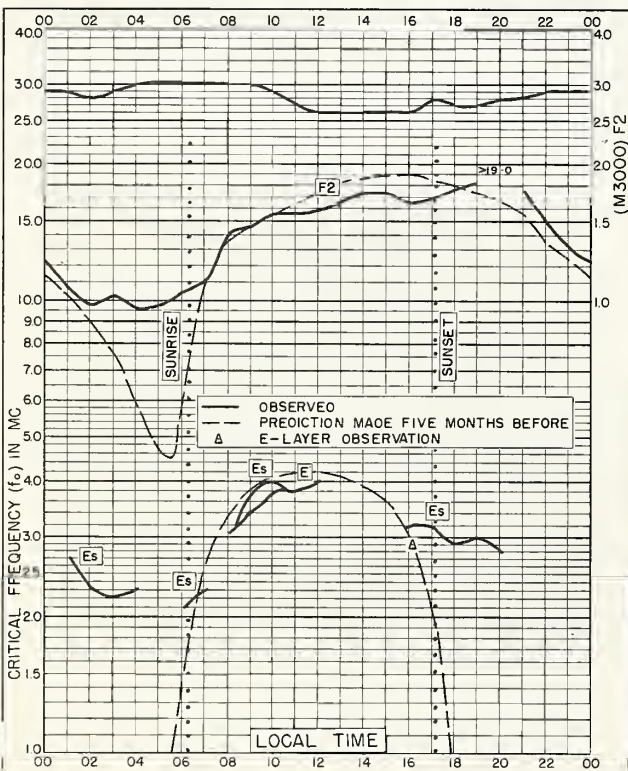


Fig. 11. FORMOSA, CHINA
25.0°N, 121.5°E
NOVEMBER 1956

NBS 503

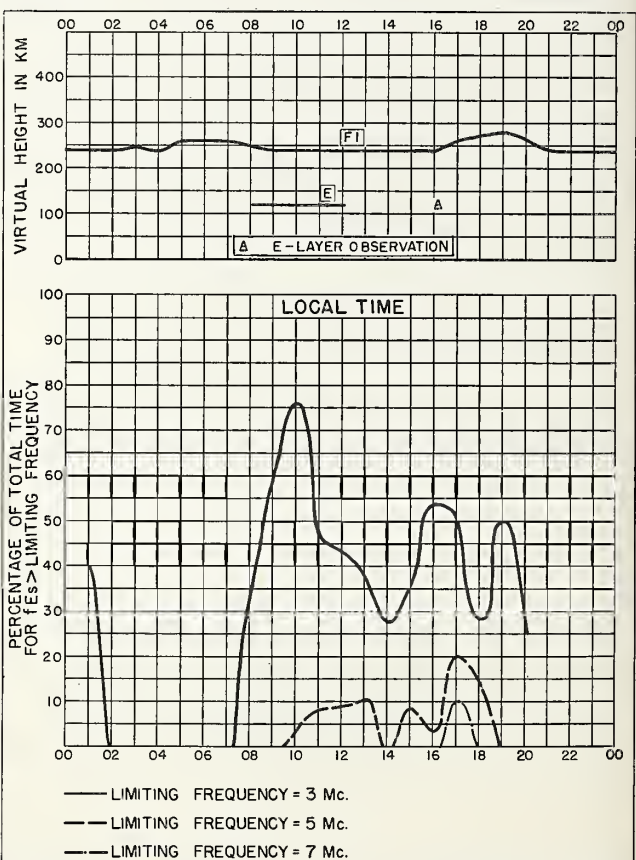


Fig. 12. FORMOSA, CHINA
NOVEMBER 1956

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

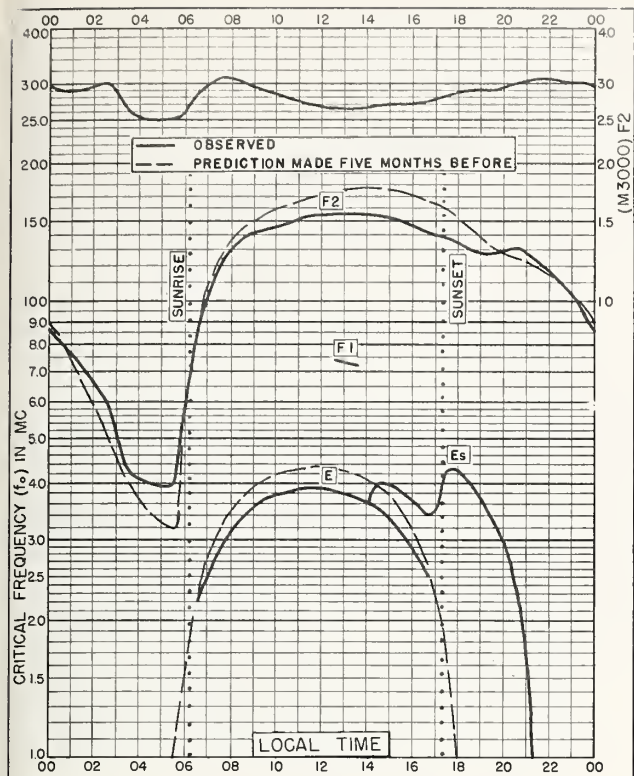


Fig. 13. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1956

NBS 503

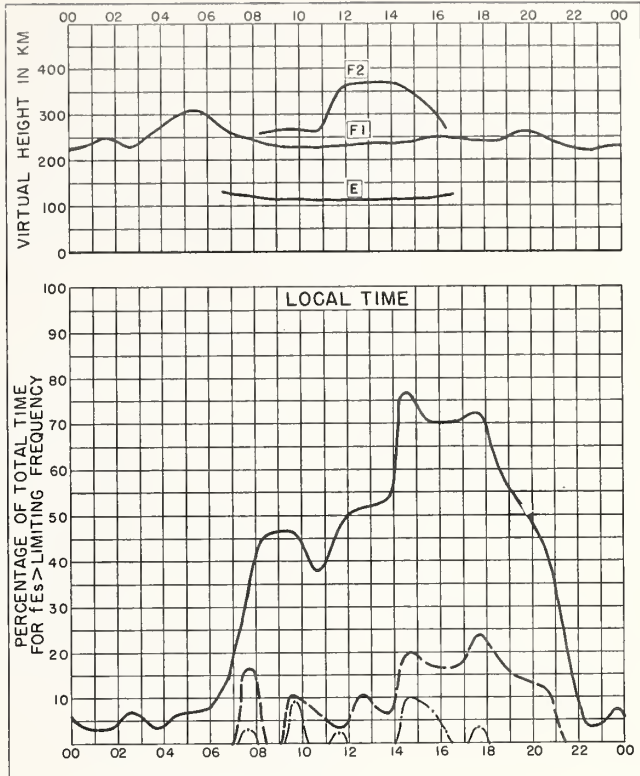


Fig. 14. MAUI, HAWAII NOVEMBER 1956

NBS 490

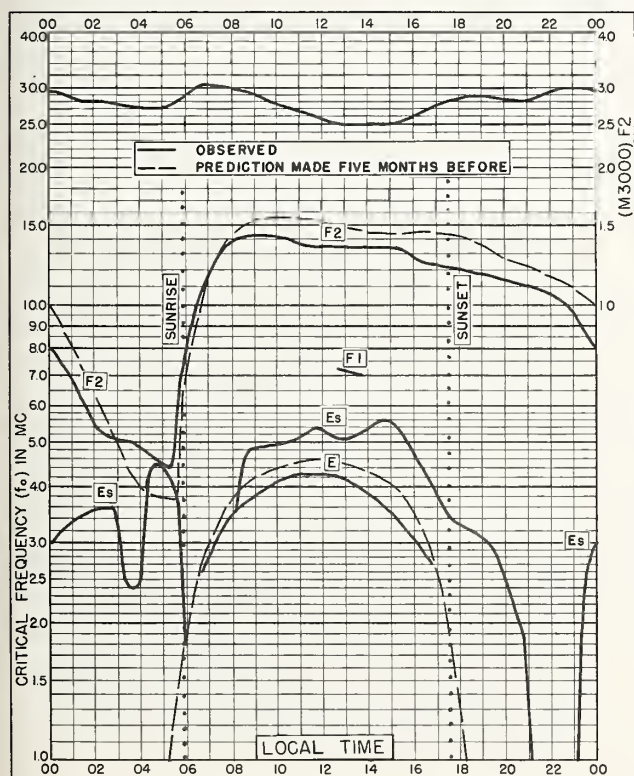


Fig. 15. PANAMA CANAL ZONE
9.4°N, 79.9°W NOVEMBER 1956

NBS 503

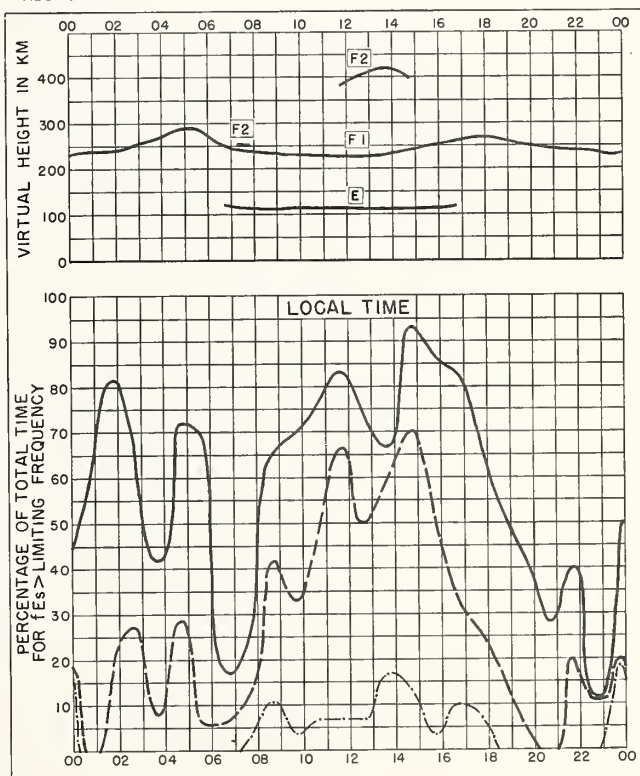


Fig. 16. PANAMA CANAL ZONE NOVEMBER 1956

NBS 490

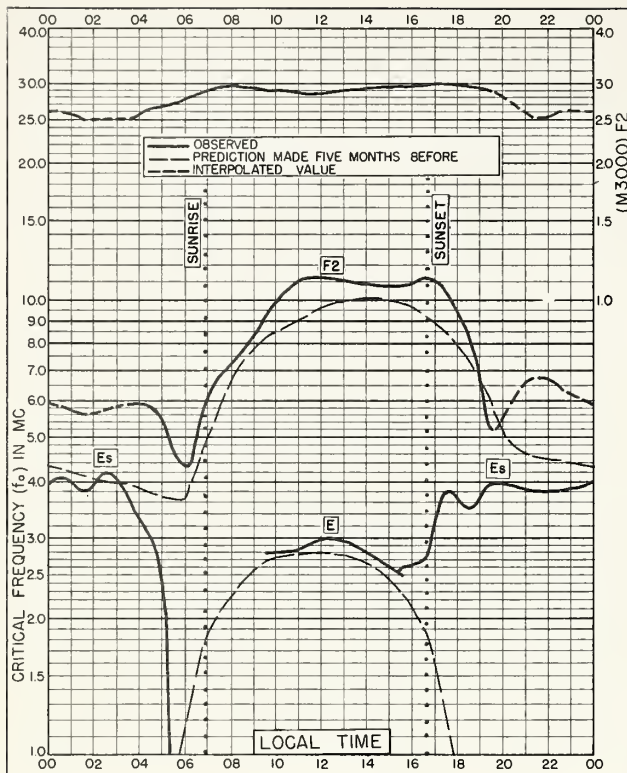


Fig. 17. REYKJAVIK, ICELAND
64.1°N, 21.8°W

OCTOBER 1956

NBS 503

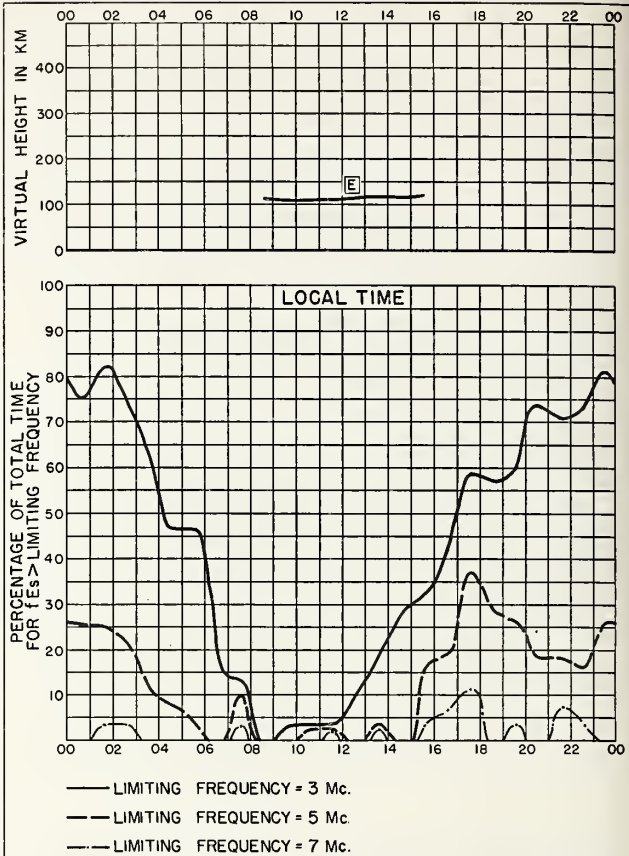


Fig. 18. REYKJAVIK, ICELAND

OCTOBER 1956

NBS 490

N. S. INTERNATIONAL PHYSICAL OFFICE 12377

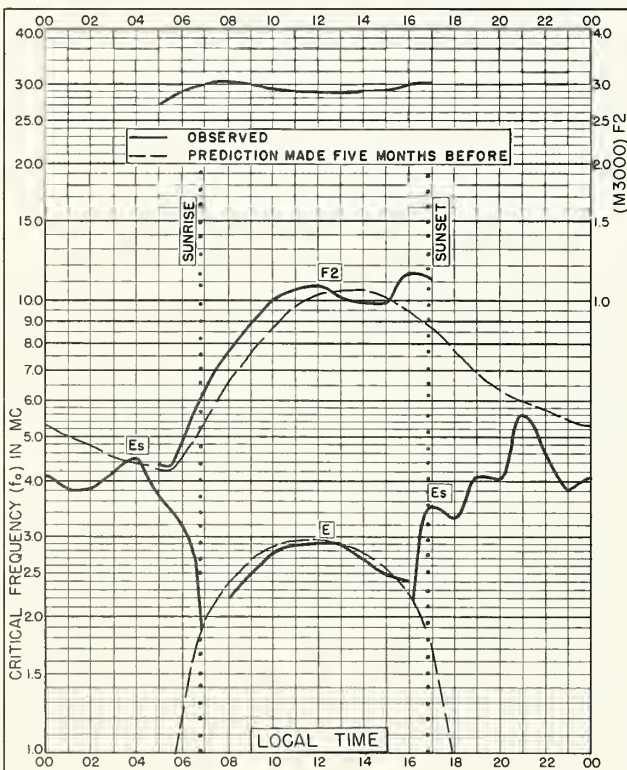


Fig. 19. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W

OCTOBER 1956

NBS 503

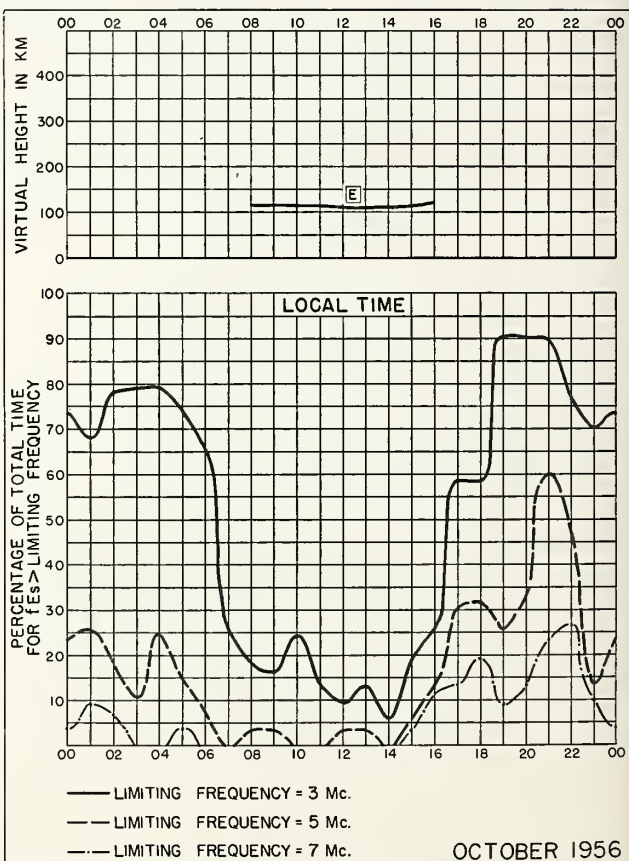


Fig. 20. NARSARSSUAK, GREENLAND

OCTOBER 1956

NBS 490

N. S. INTERNATIONAL PHYSICAL OFFICE 12377

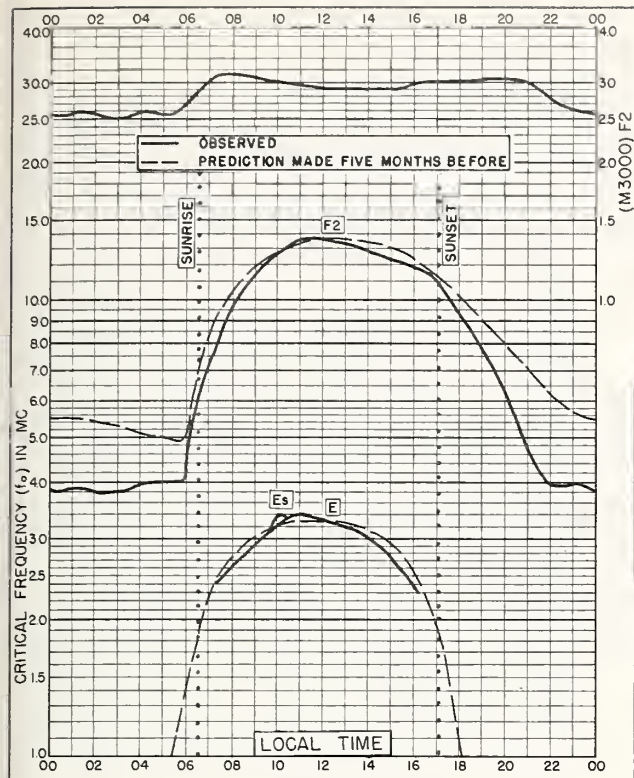


Fig. 21. ADAK, ALASKA
51.9°N, 176.6°W
OCTOBER 1956

NBS 503

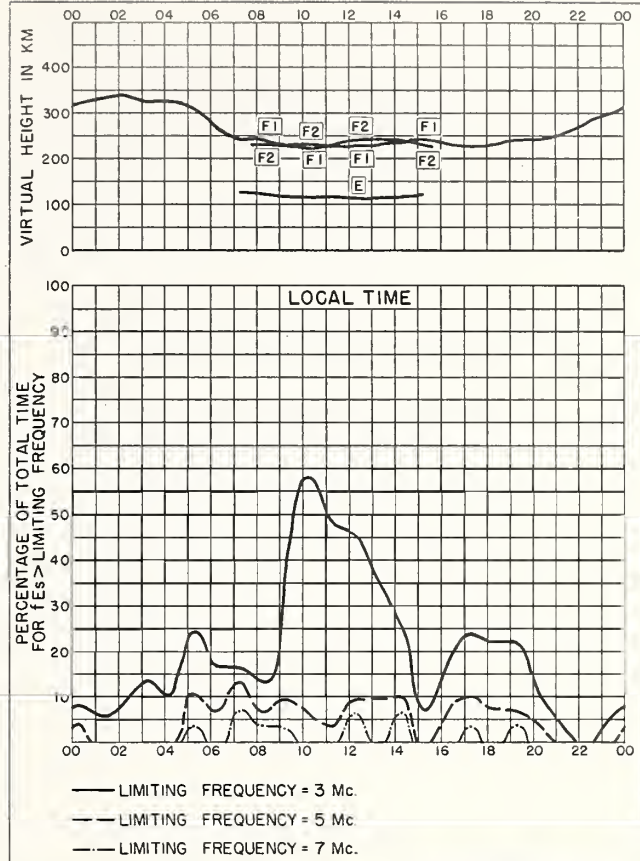


Fig. 22. ADAK, ALASKA
OCTOBER 1956

NBS 490

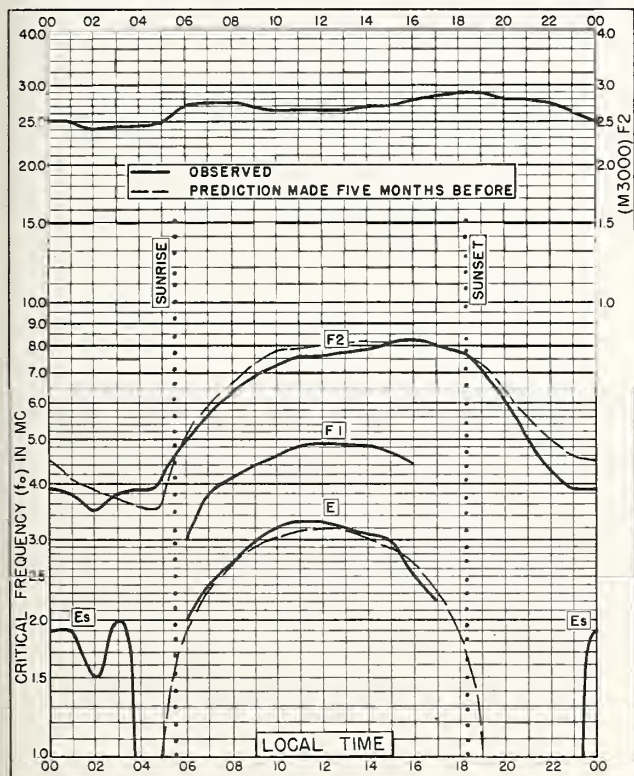


Fig. 23. ANCHORAGE, ALASKA
61.2°N, 149.9°W
SEPTEMBER 1956

NBS 503

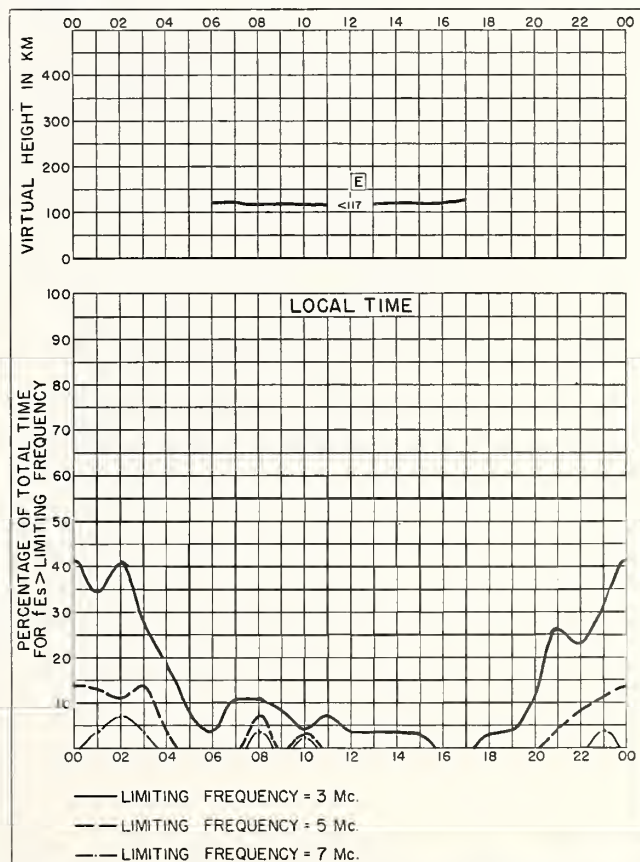


Fig. 24. ANCHORAGE, ALASKA
SEPTEMBER 1956

NBS 490

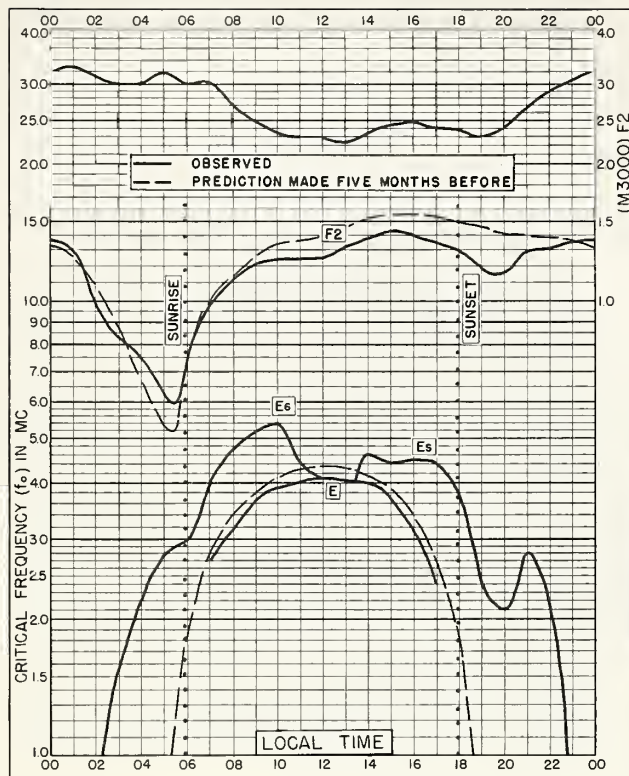


Fig. 25. BAGUIO, P. I.

16.4°N, 120.6°E

SEPTEMBER 1956

NBS 503

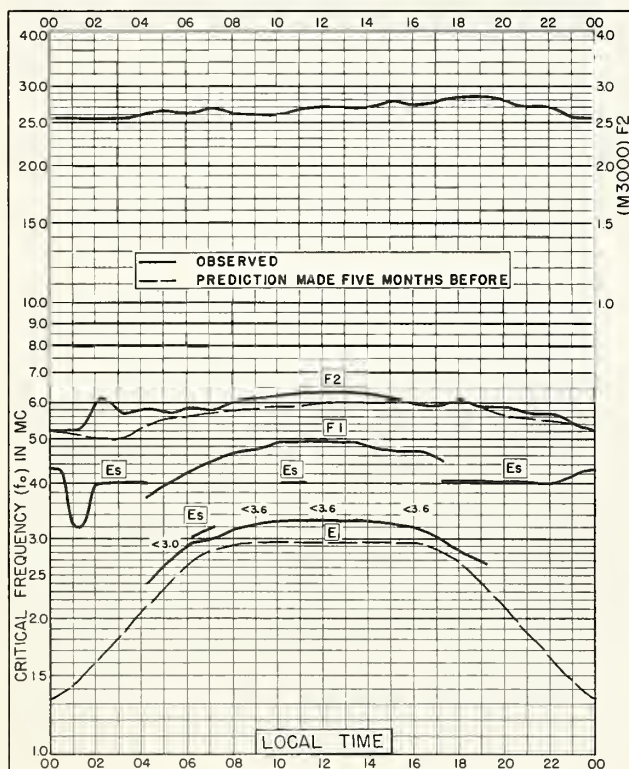


Fig. 27. TROMSØ, NORWAY

69.7°N, 19.0°E

JULY 1956

NBS 503

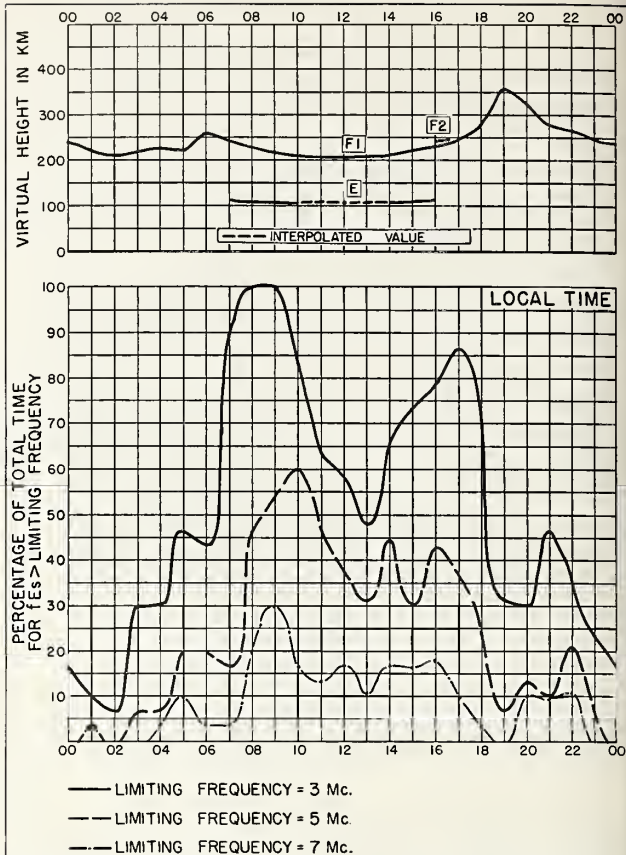


Fig. 26. BAGUIO, P. I.

SEPTEMBER 1956

NBS 490

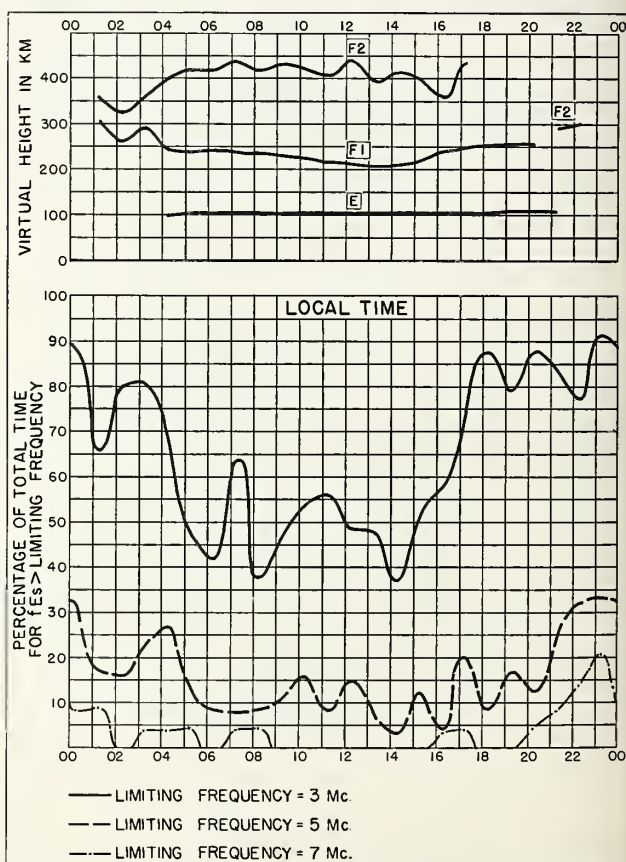


Fig. 28. TROMSØ, NORWAY

JULY 1956

NBS 490

NBS 490

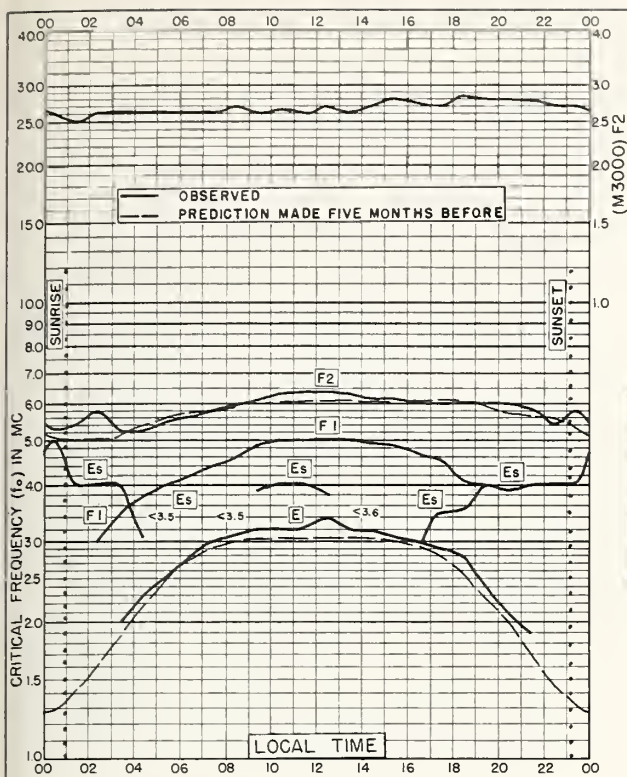


Fig. 29. KIRUNA, SWEDEN
67.8°N, 20.3°E

JULY 1956

NBS 503

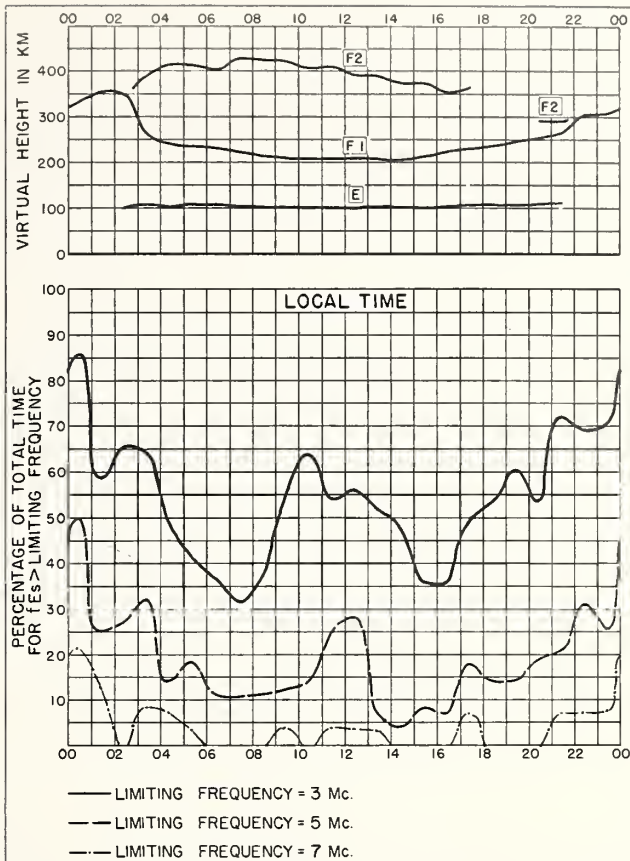


Fig. 30. KIRUNA, SWEDEN

JULY 1956

NBS 490

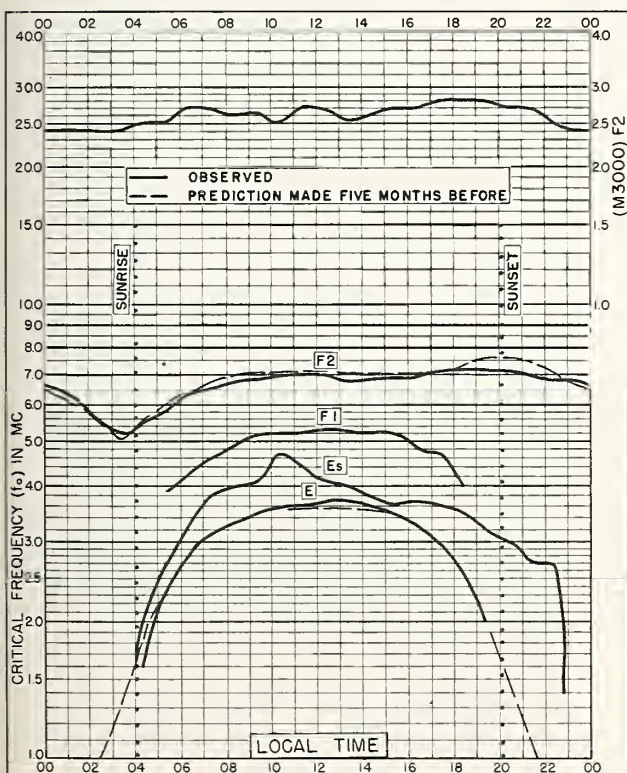


Fig. 31. De BILT, HOLLAND
52.1°N, 5.2°E

JULY 1956

NBS 503

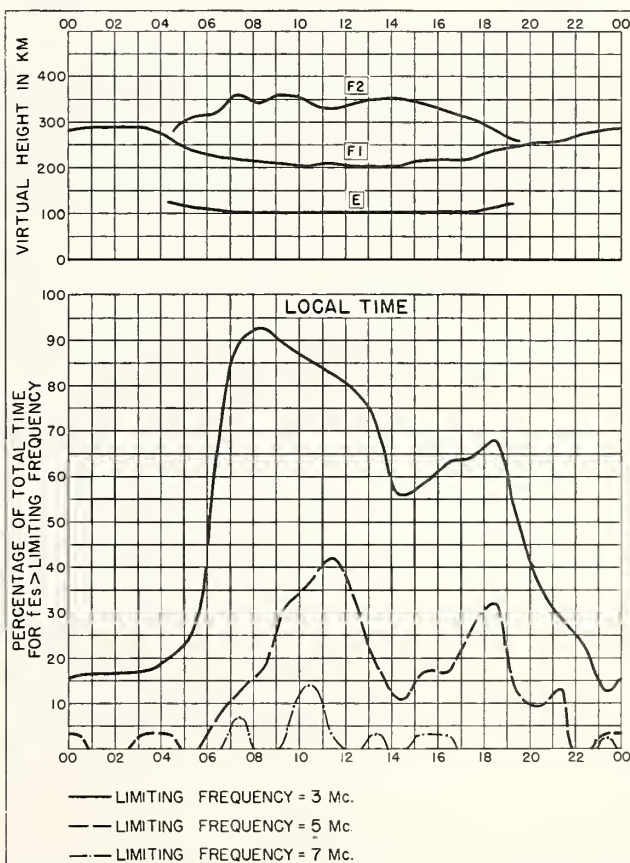


Fig. 32. De BILT, HOLLAND

JULY 1956

NBS 490

N. S. GREENWICH MEAN TIME, 1956

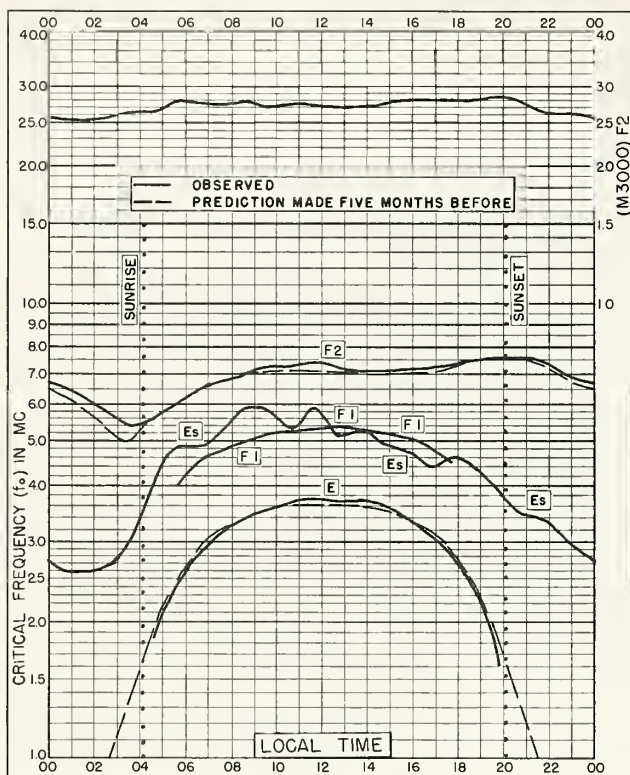


Fig. 33. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E

JULY 1956

NBS 503

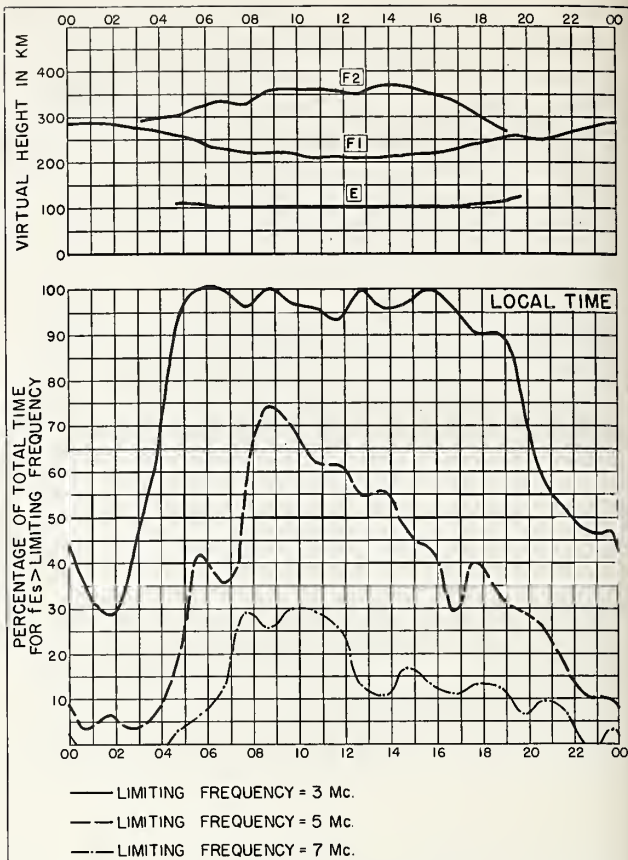


Fig. 34. LINDAU/HARZ, GERMANY

JULY 1956

NBS 490

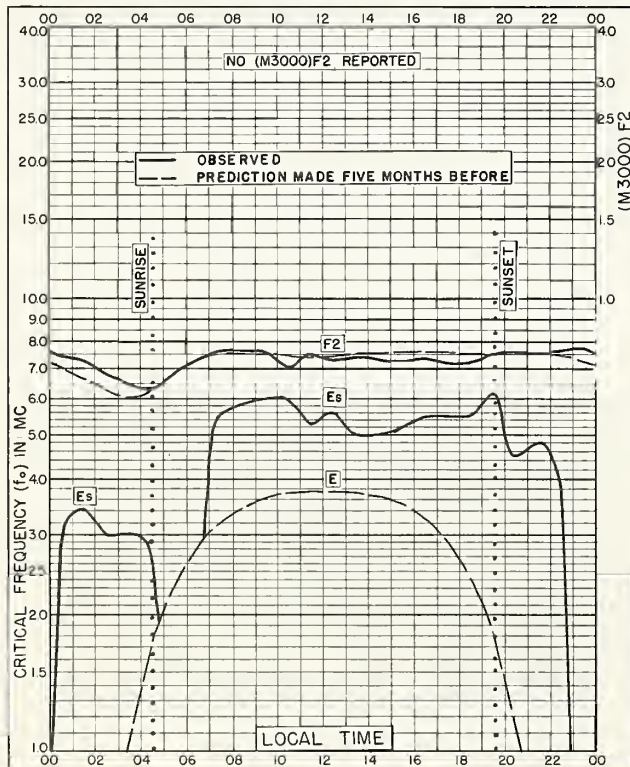


Fig. 35. WAKKANAI, JAPAN
45.4°N, 141.7°E

JULY 1956

NBS 503

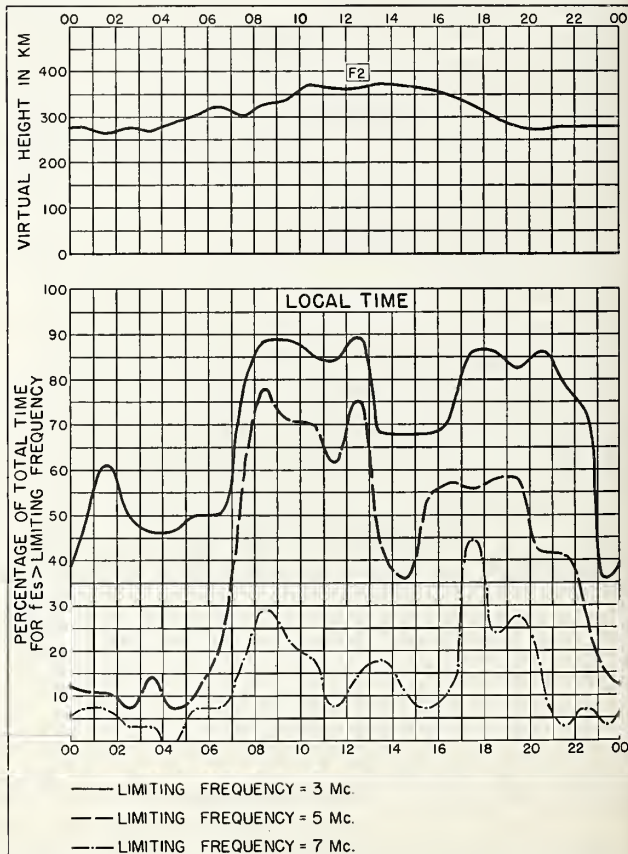


Fig. 36. WAKKANAI, JAPAN

JULY 1956

NBS 490

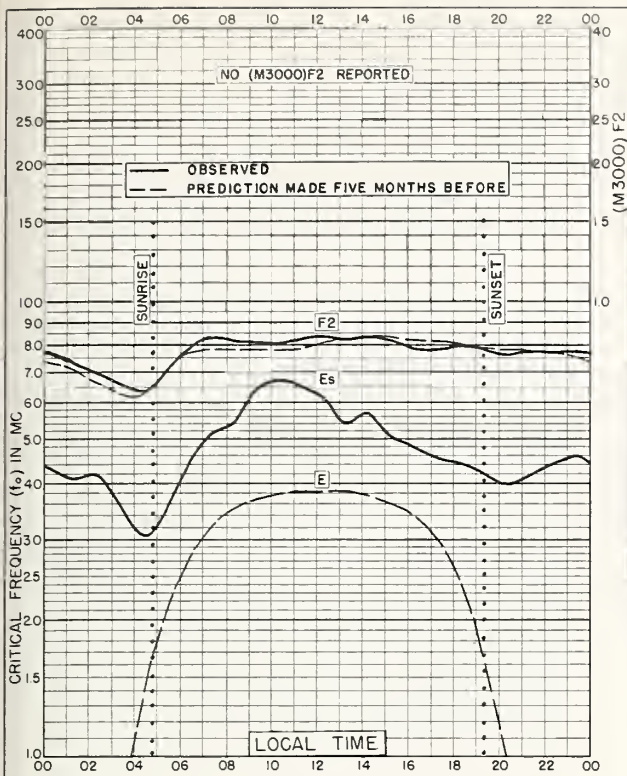


Fig. 37. AKITA, JAPAN
39.7°N, 140.1°E

JULY 1956

NBS 503

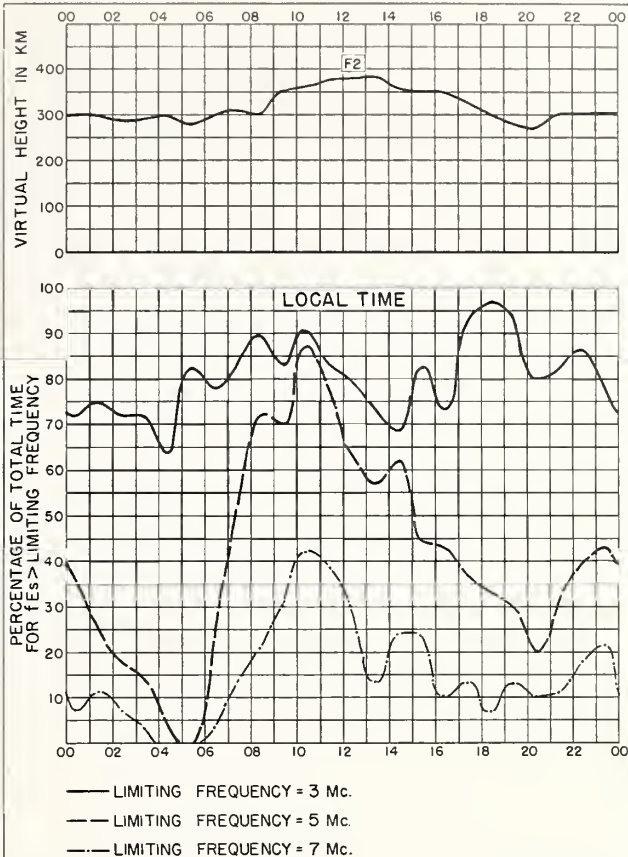


Fig. 38. AKITA, JAPAN

JULY 1956

NBS 490

N. S. GOVERNMENT PRINTING OFFICE: 1957

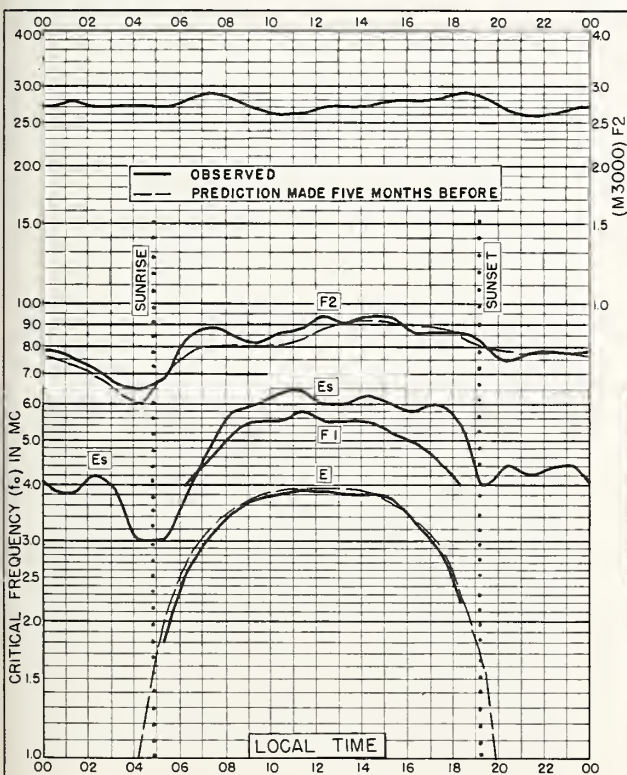


Fig. 39. TOKYO, JAPAN
35.7°N, 139.5°E

JULY 1956

NBS 503

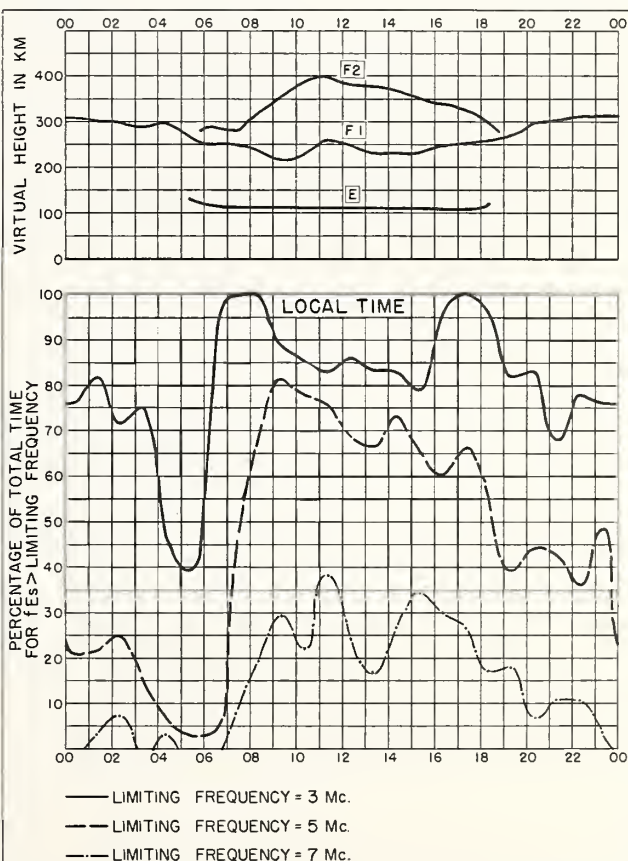


Fig. 40. TOKYO, JAPAN

JULY 1956

NBS 490

N. S. GOVERNMENT PRINTING OFFICE: 1957

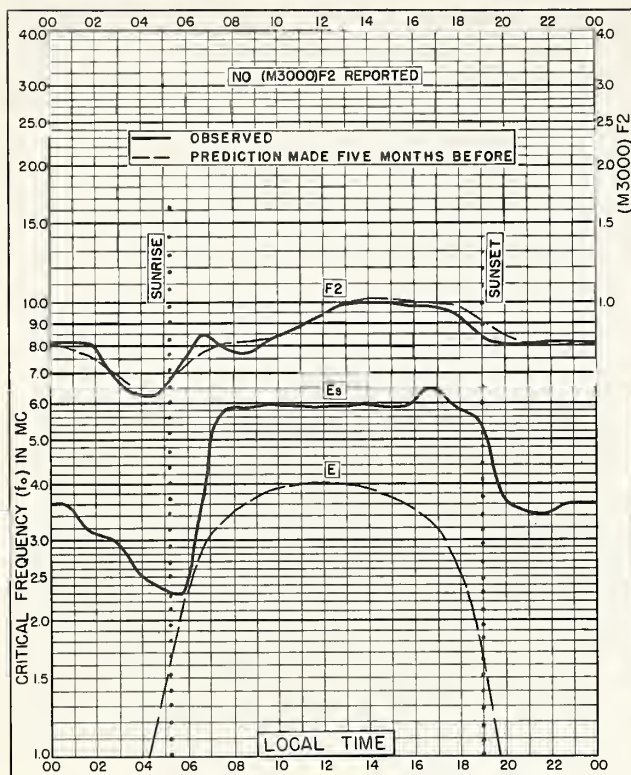


Fig. 41. YAMAGAWA, JAPAN
31.2°N, 130.6°E

JULY 1956

NBS 503

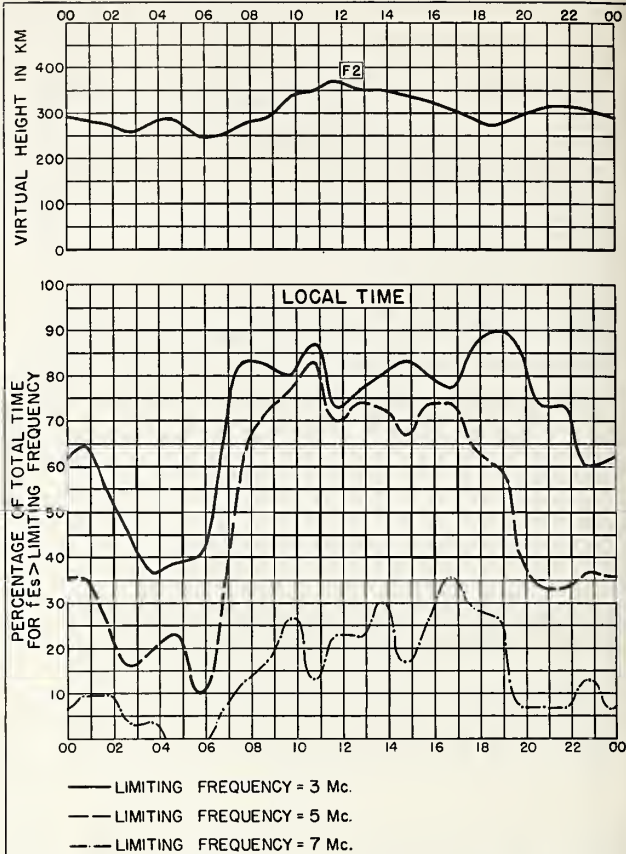


Fig. 42. YAMAGAWA, JAPAN

JULY 1956

NBS 490

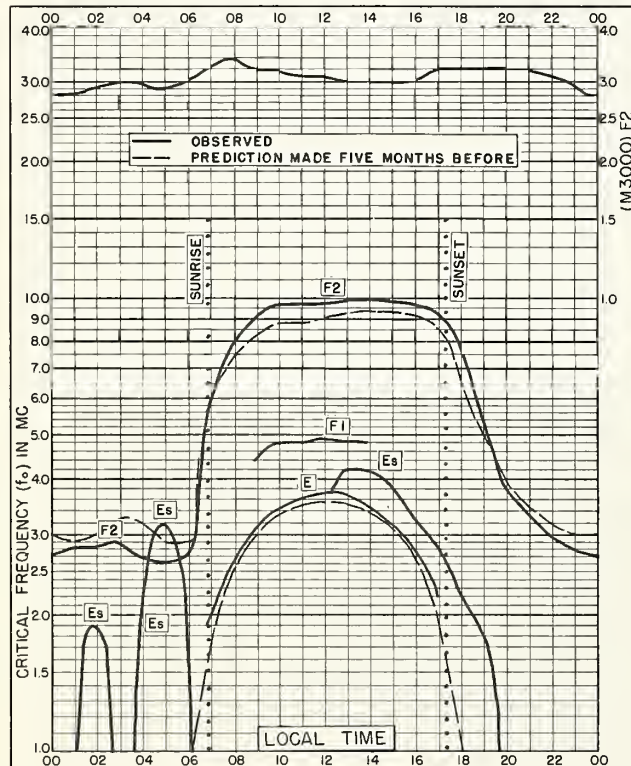


Fig. 43. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E

JULY 1956

NBS 503

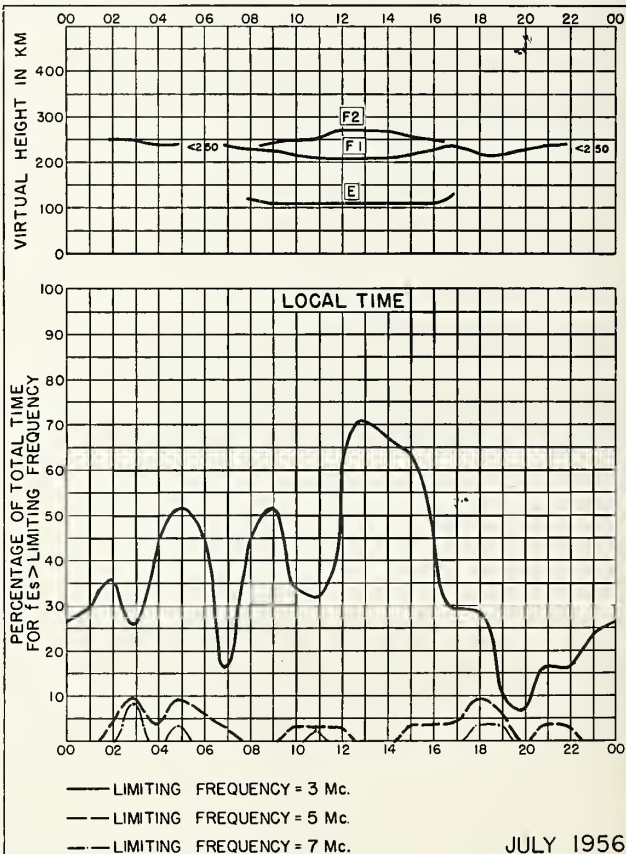


Fig. 44. JOHANNESBURG, UNION OF S. AFRICA

JULY 1956

NBS 490

N. S. JOHANNESBURG RECEIVING OFFICE 518077

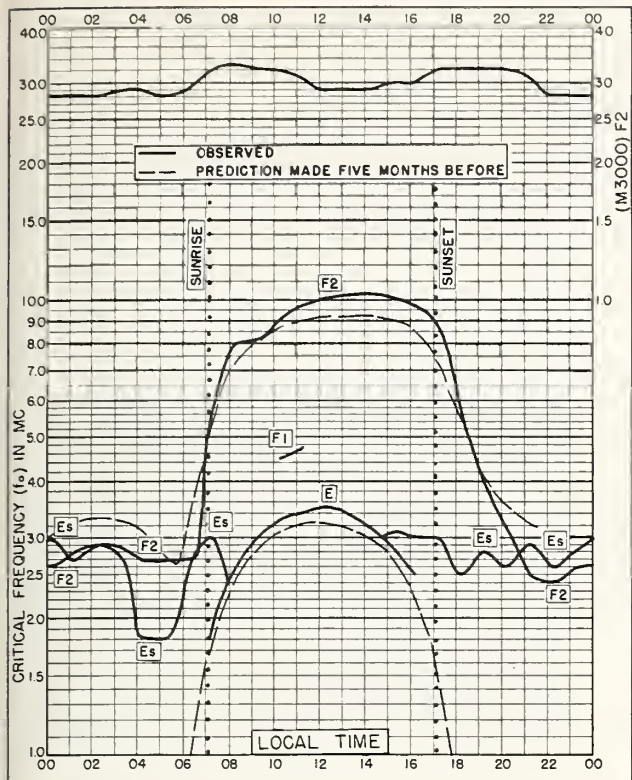
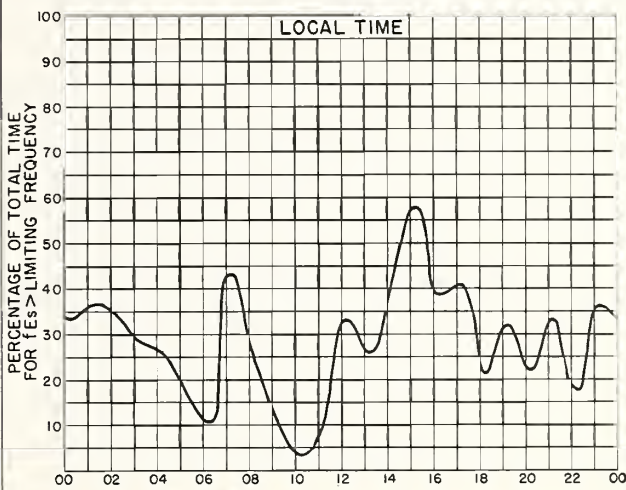
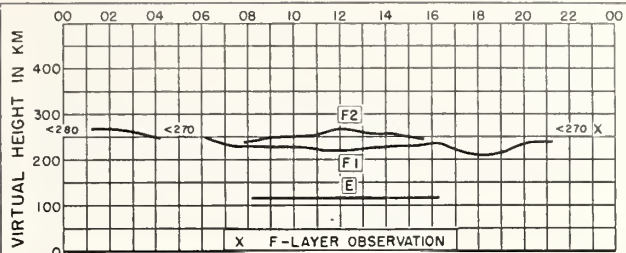


Fig. 45. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E
JULY 1956

NBS 503



— LIMITING FREQUENCY = 3 Mc.
— LIMITING FREQUENCY = 5 Mc.
— LIMITING FREQUENCY = 7 Mc.

JULY 1956

Fig. 46. CAPETOWN, UNION OF S. AFRICA

NBS 490

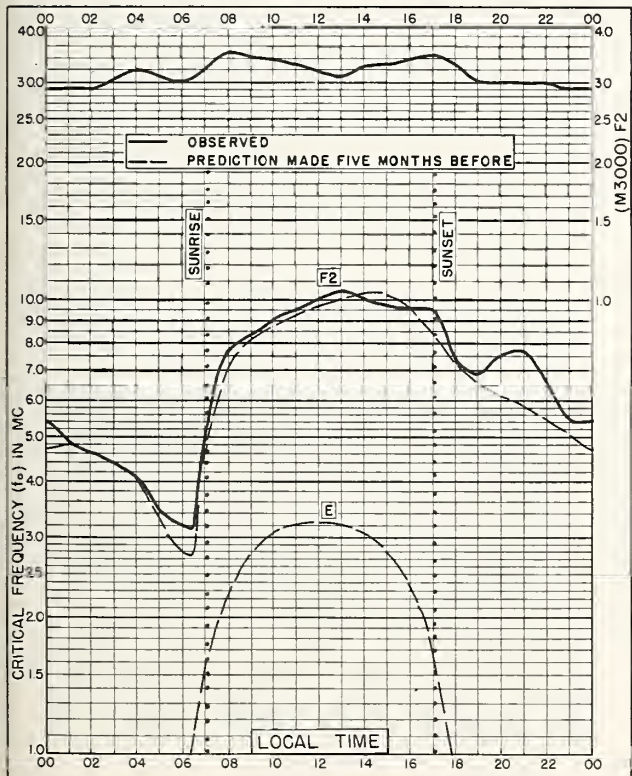
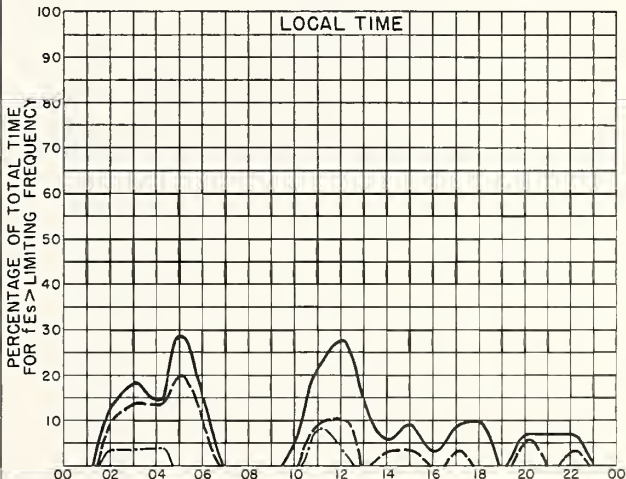
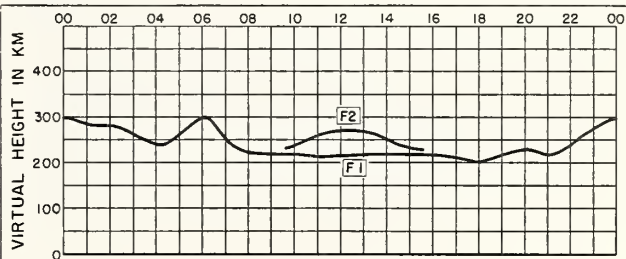


Fig. 47. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W
JULY 1956

NBS 503



— LIMITING FREQUENCY = 3 Mc.
— LIMITING FREQUENCY = 5 Mc.
— LIMITING FREQUENCY = 7 Mc.

JULY 1956

Fig. 48. BUENOS AIRES, ARGENTINA

NBS 490

NBS 490

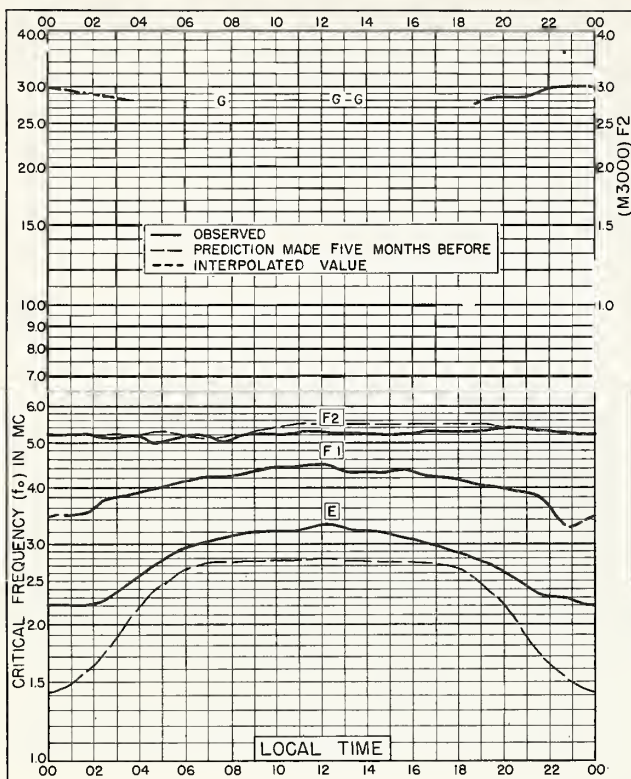


Fig. 49. RESOLUTE BAY, CANADA
74.7°N, 94.9°W

JUNE 1956

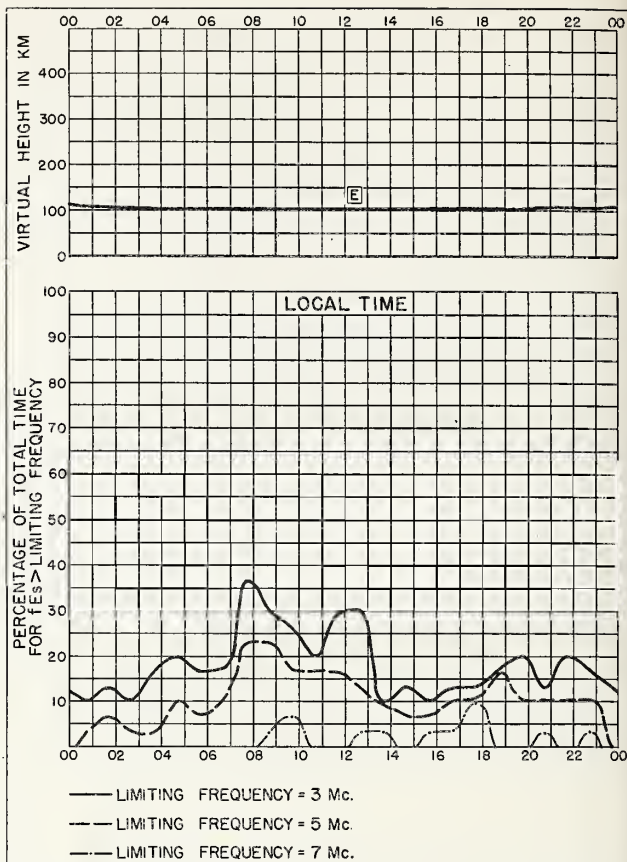


Fig. 50. RESOLUTE BAY, CANADA

JUNE 1956

NBS 490

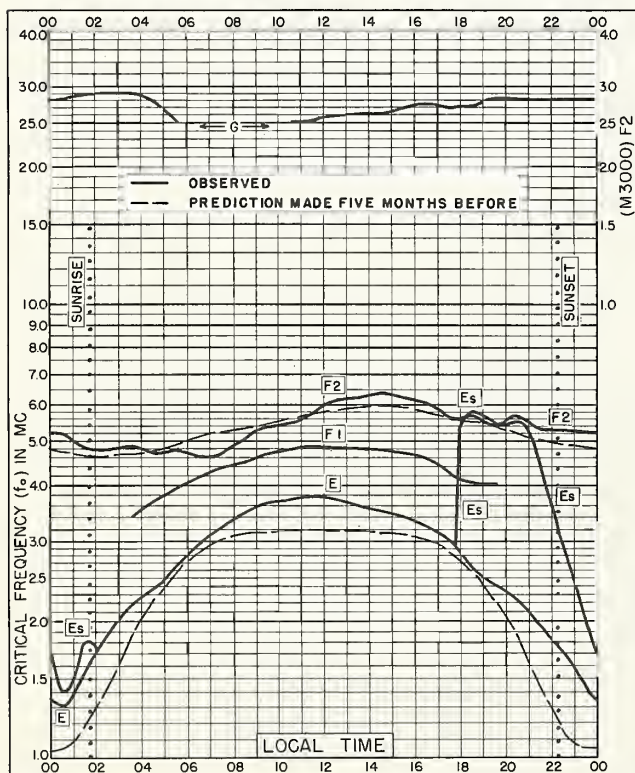


Fig. 51. BAKER LAKE, CANADA
64.3°N, 96.0°W

JUNE 1956

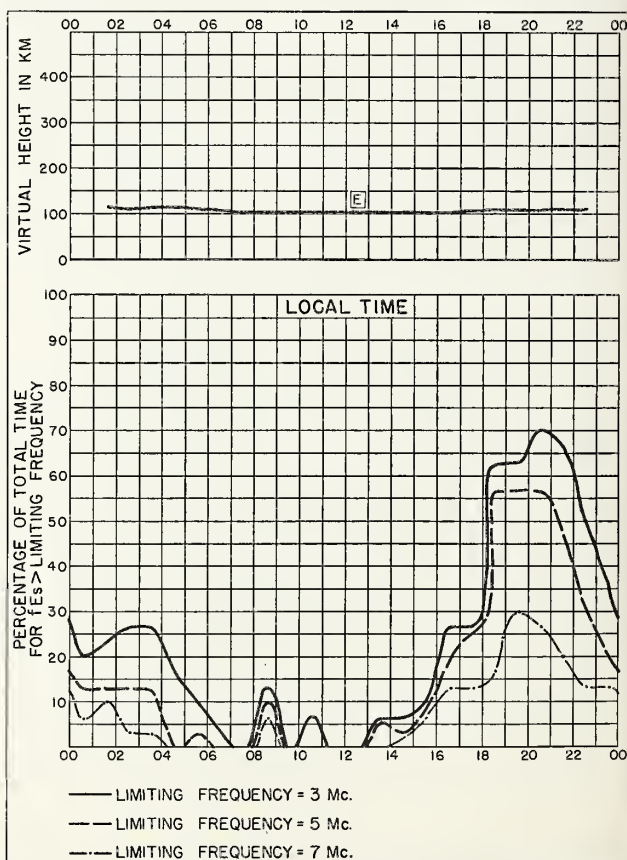


Fig. 52. BAKER LAKE, CANADA

JUNE 1956

NBS 490

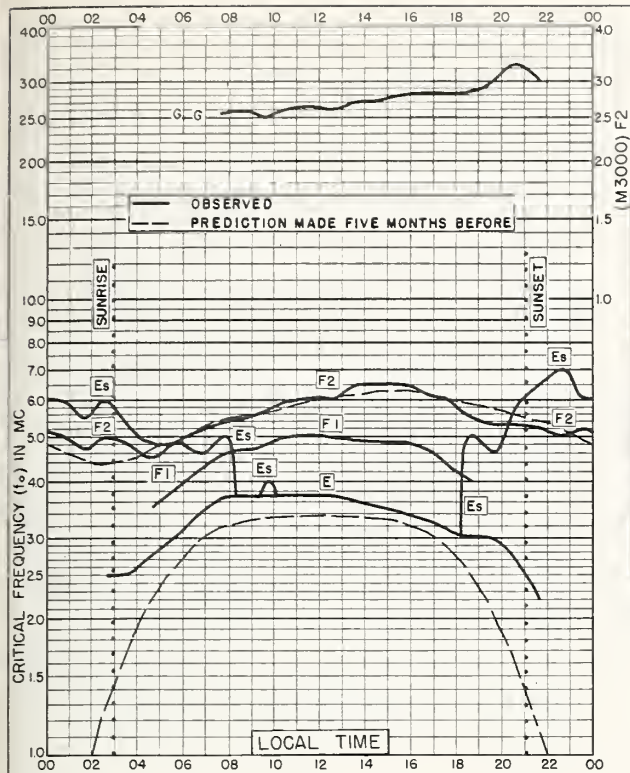


Fig. 53. CHURCHILL, CANADA
58.8°N, 94.2°W

JUNE 1956

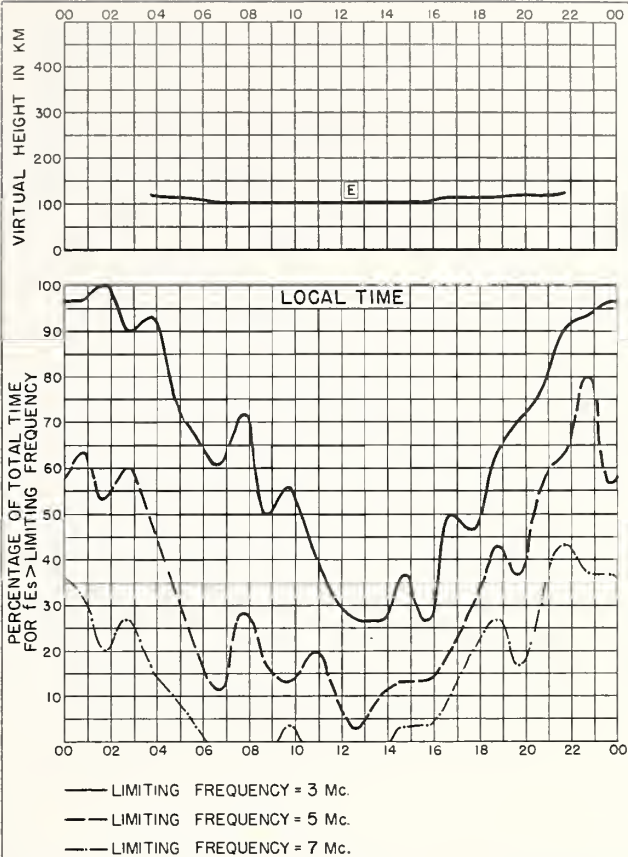


Fig. 54. CHURCHILL, CANADA

JUNE 1956

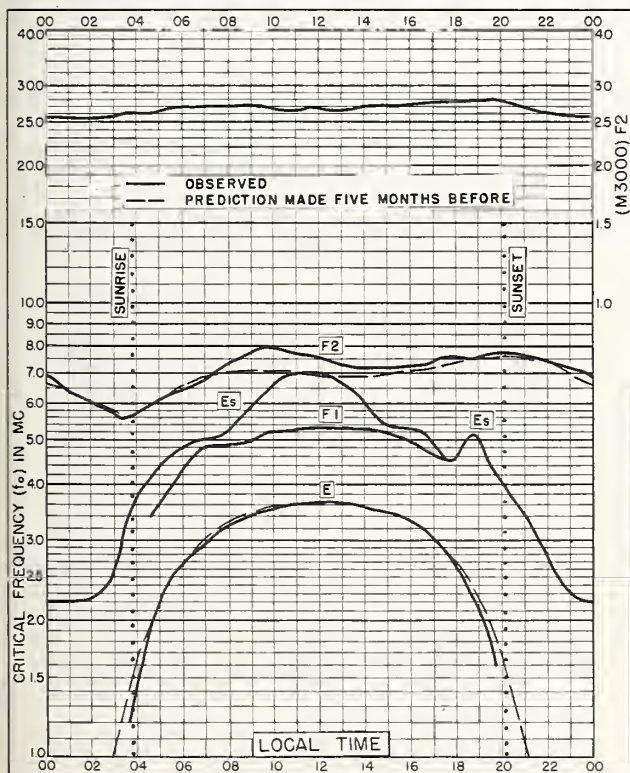


Fig. 55. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E

JUNE 1956

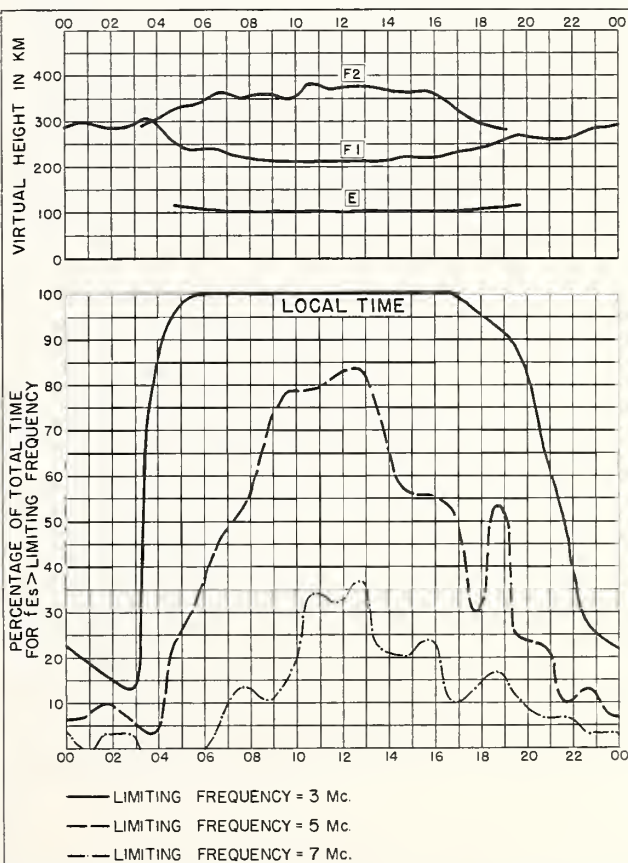


Fig. 56. LINDAU/HARZ, GERMANY

JUNE 1956

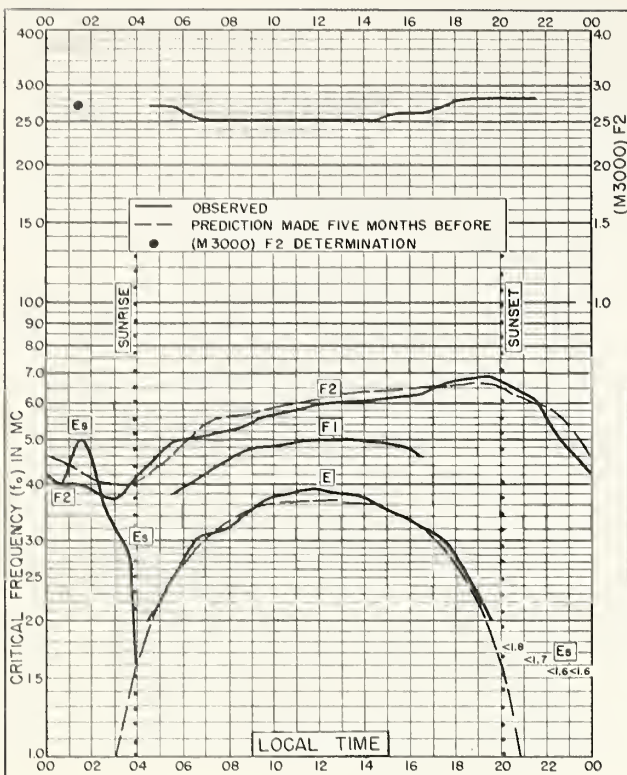


Fig. 57. WINNIPEG, CANADA
49.9°N, 97.4°W

JUNE 1956

NBS 503

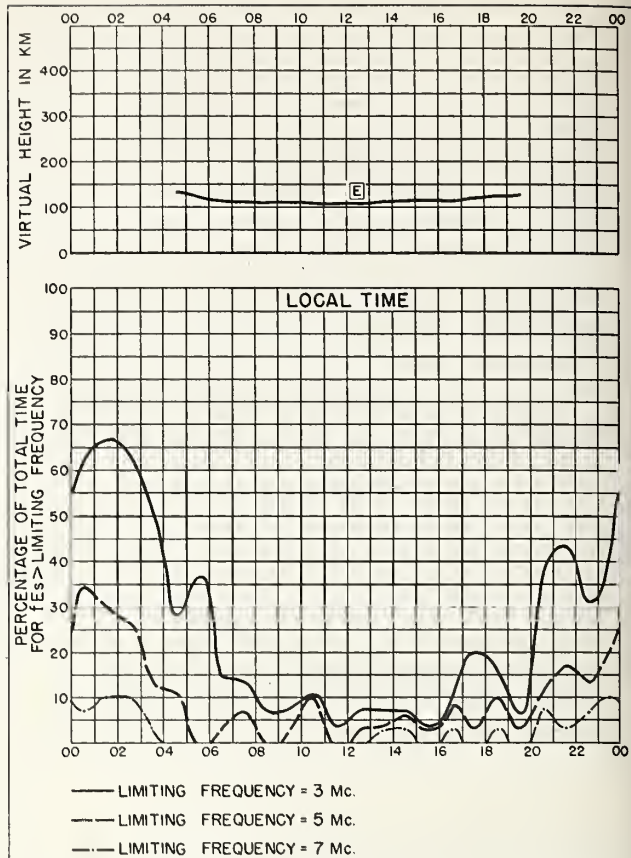


Fig. 58. WINNIPEG, CANADA

JUNE 1956

NBS 490

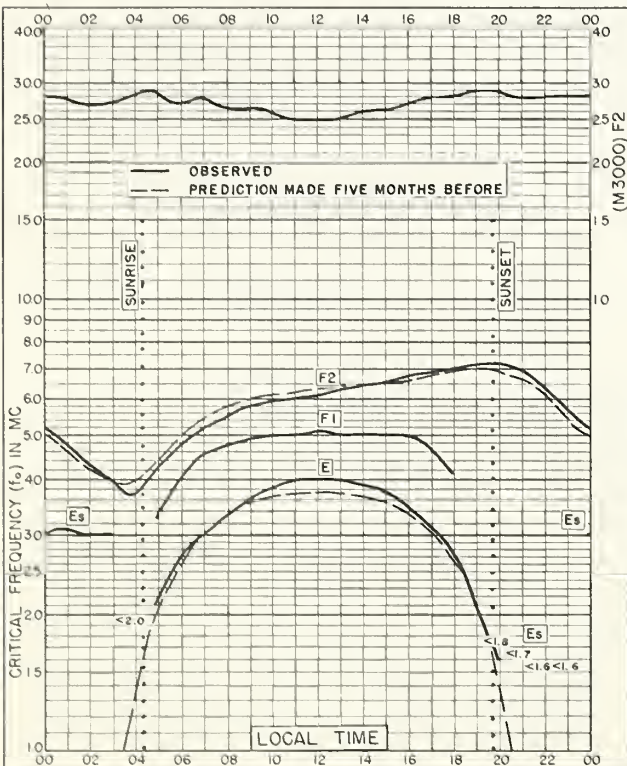


Fig. 59. OTTAWA, CANADA
45.4°N, 75.9°W

JUNE 1956

NBS 503

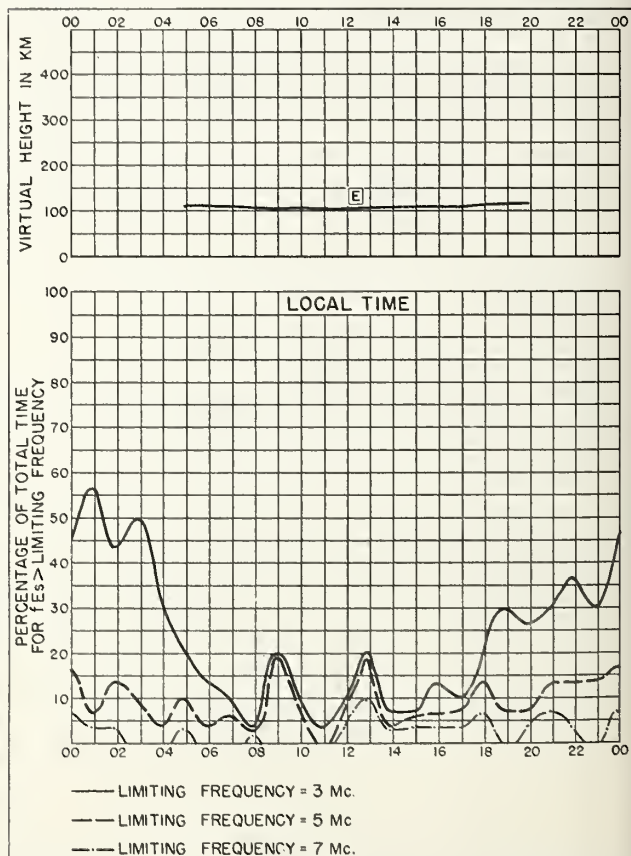
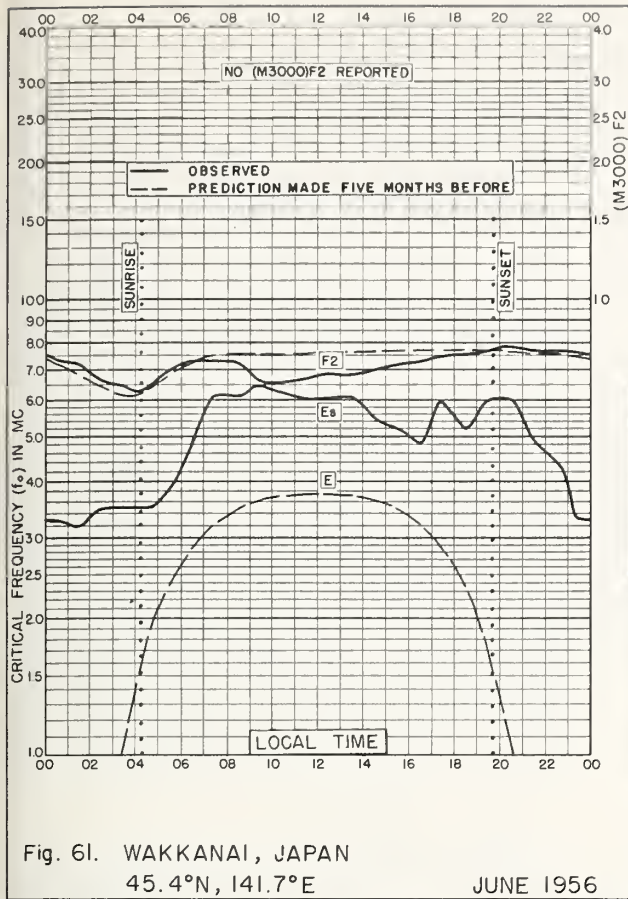


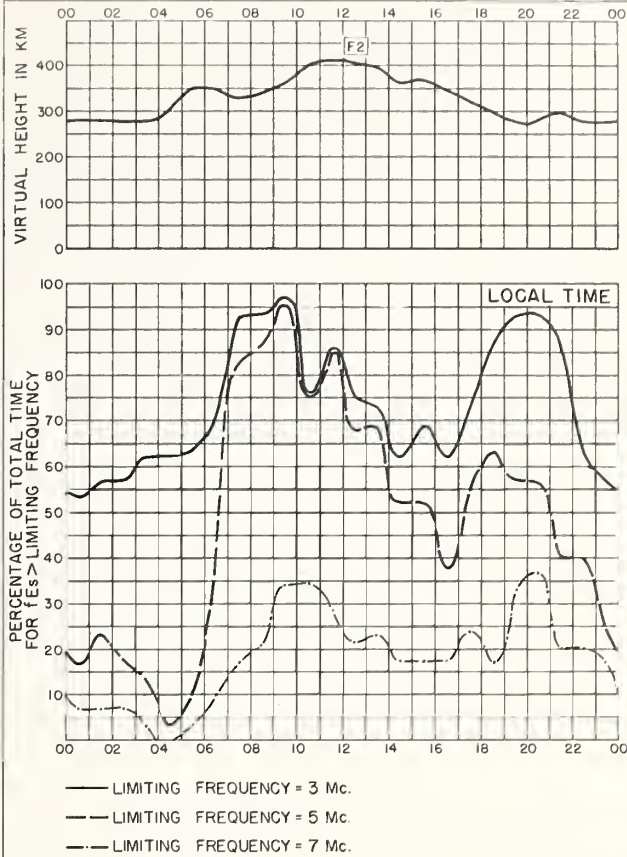
Fig. 60. OTTAWA, CANADA

JUNE 1956

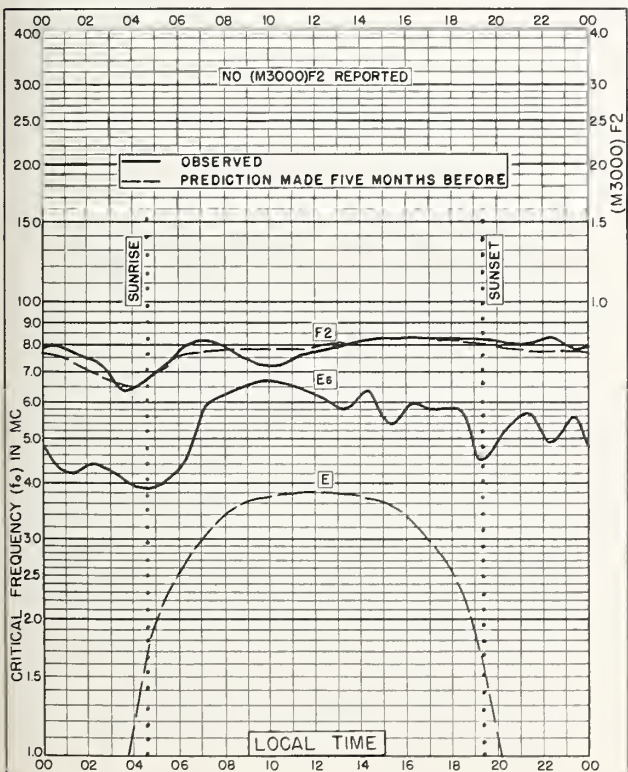
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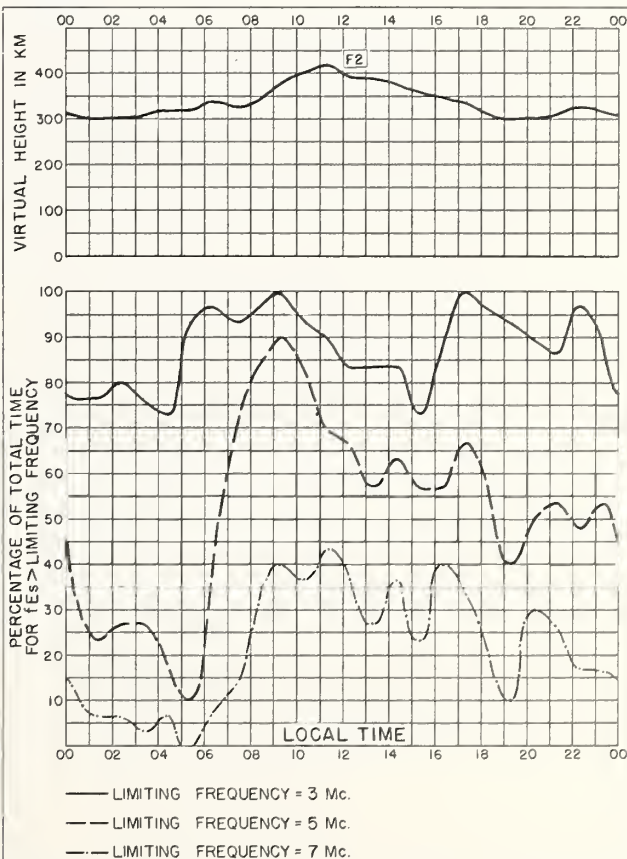
NBS 503



NBS 490



NBS 503



NBS 490

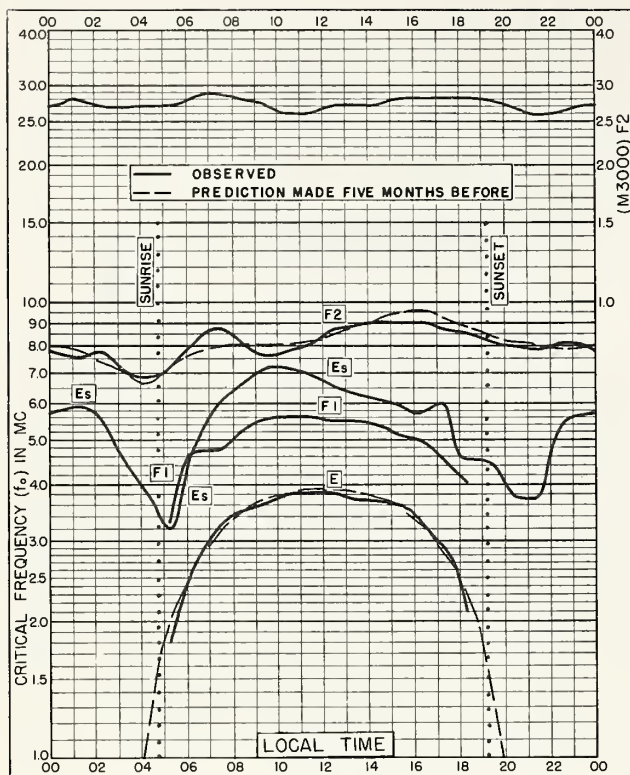


Fig. 65. TOKYO, JAPAN
35.7°N, 139.5°E

JUNE 1956

NBS 503

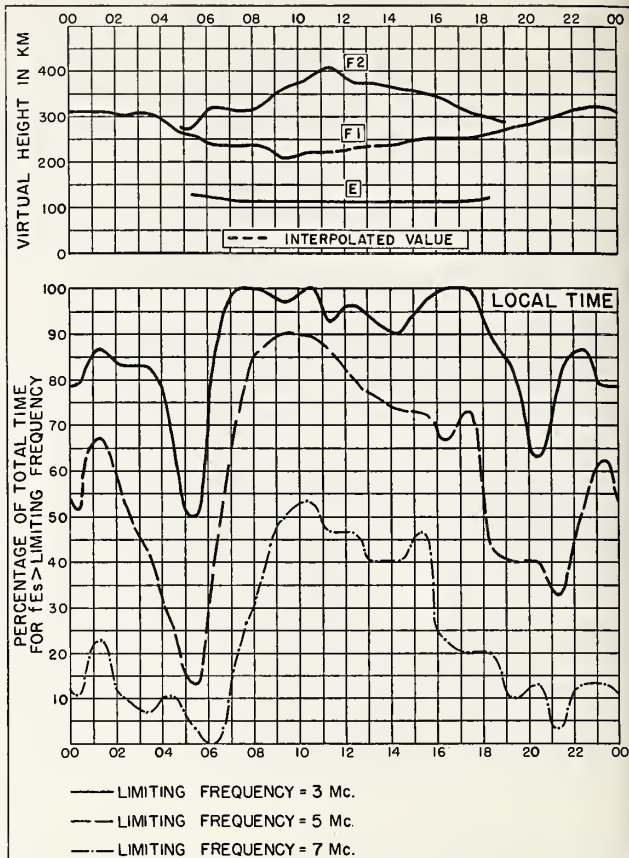


Fig. 66. TOKYO, JAPAN

JUNE 1956

NBS 490

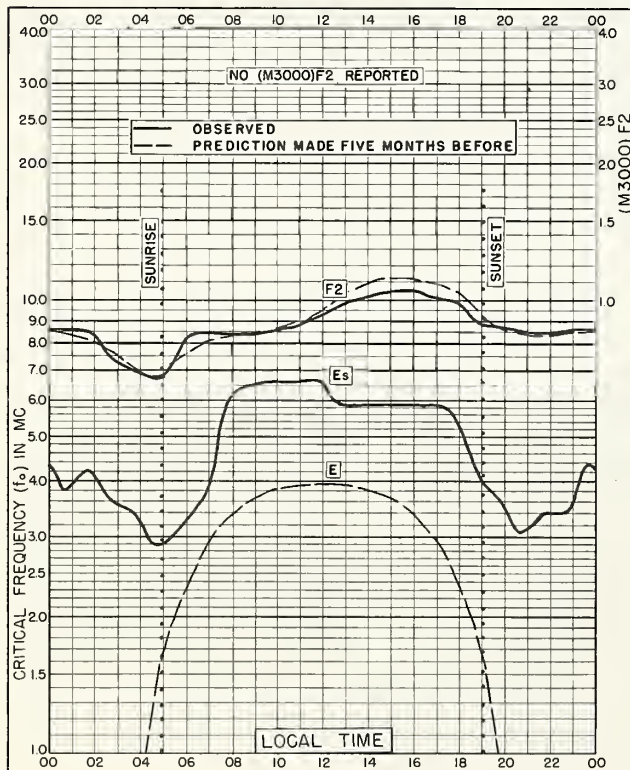


Fig. 67. YAMAGAWA, JAPAN
31.2°N, 130.6°E

JUNE 1956

NBS 503

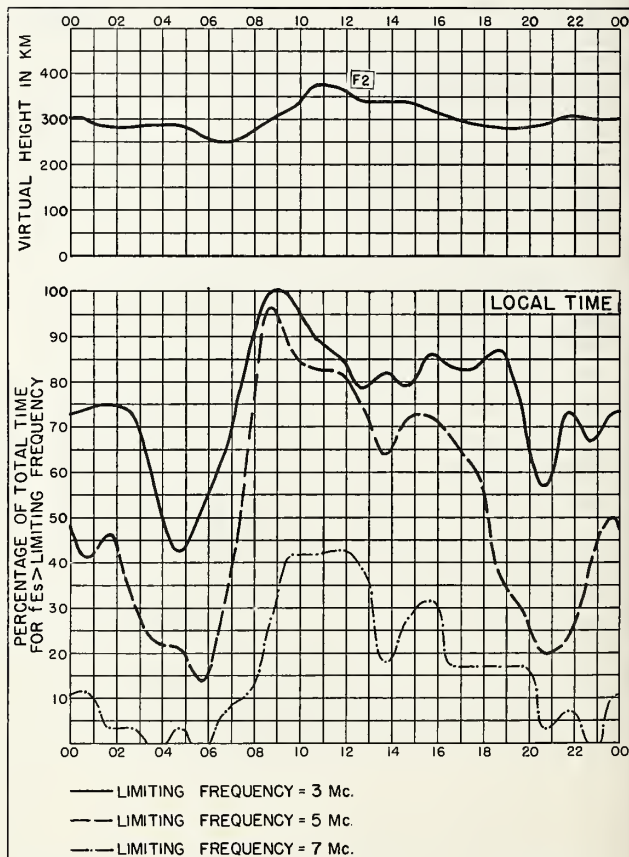
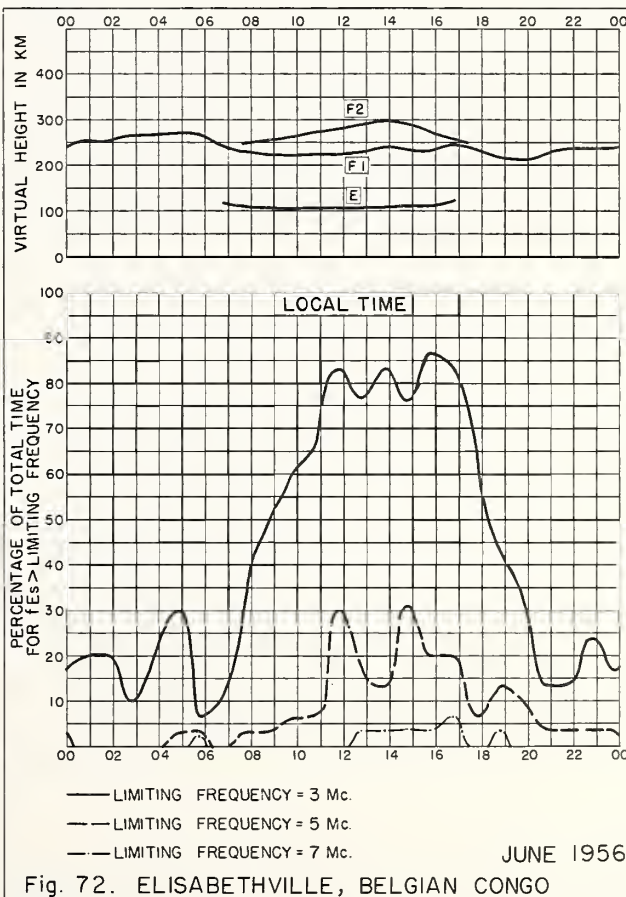
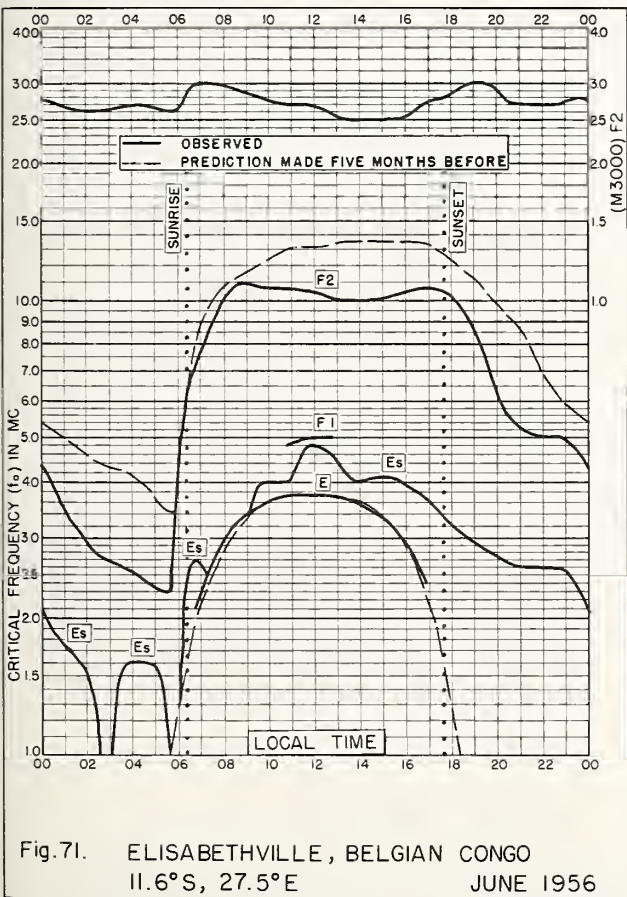
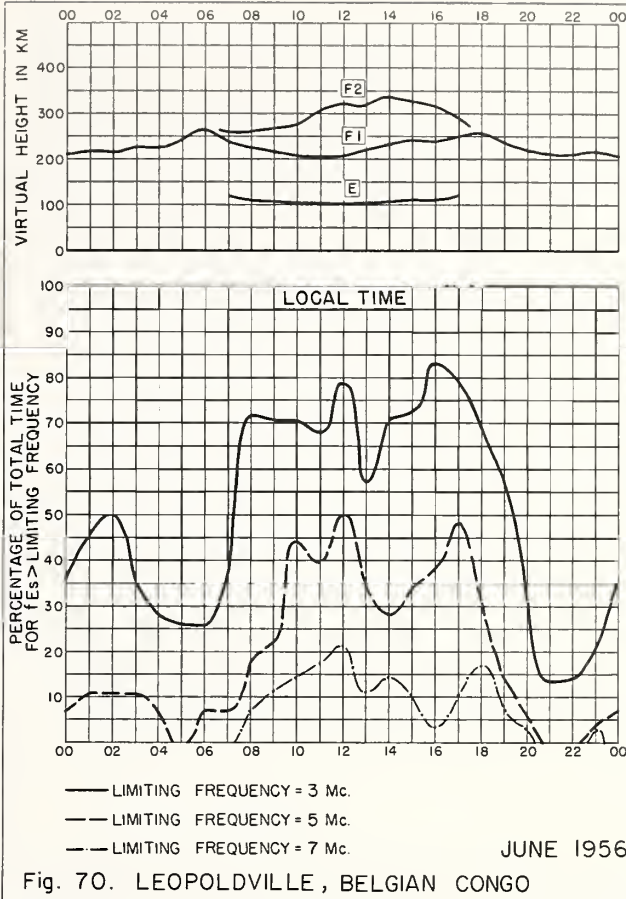
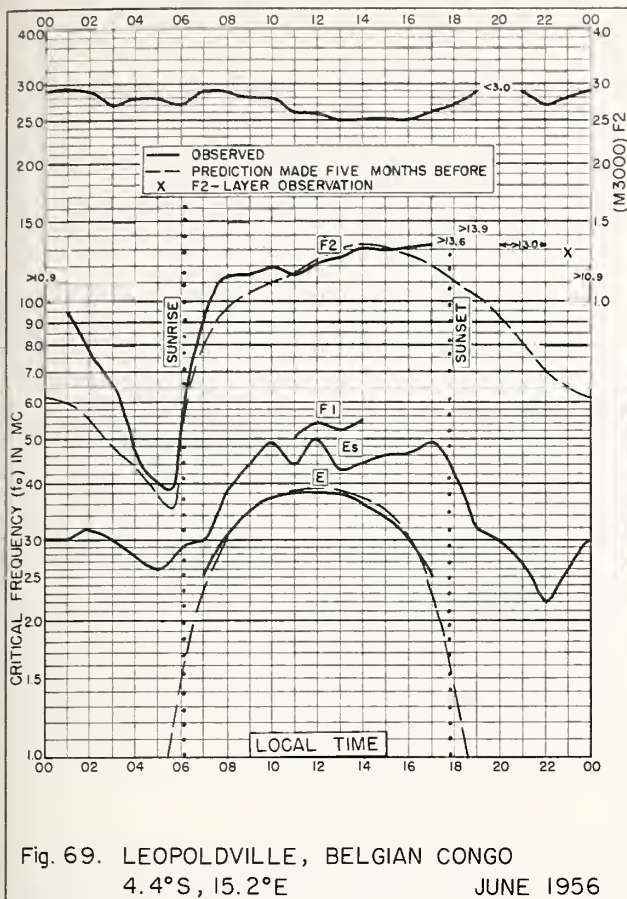


Fig. 68. YAMAGAWA, JAPAN

JUNE 1956

NBS 490

NBS 490



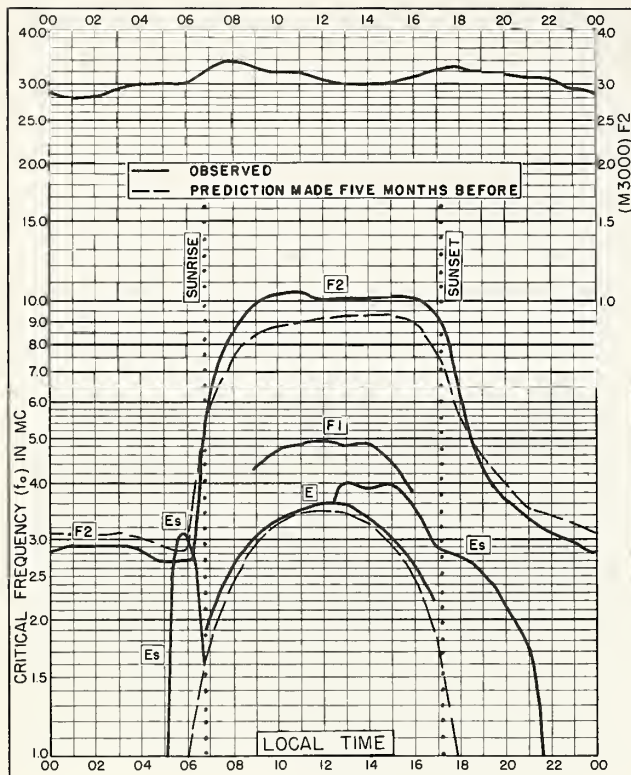


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E
JUNE 1956

NBS 503

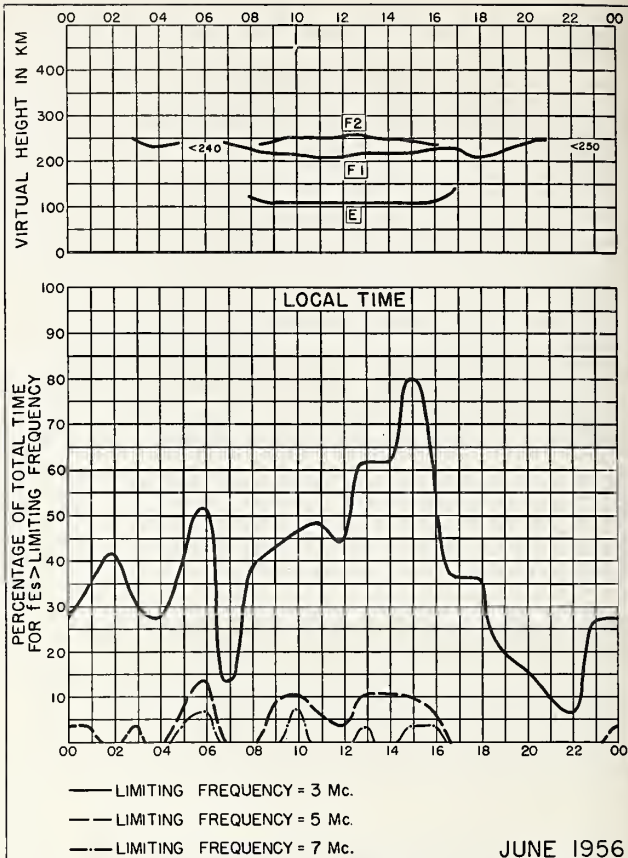


Fig. 74. JOHANNESBURG, UNION OF S. AFRICA

JUNE 1956

— LIMITING FREQUENCY = 3 Mc.
— LIMITING FREQUENCY = 5 Mc.
— LIMITING FREQUENCY = 7 Mc.

NBS 490

NBS 507

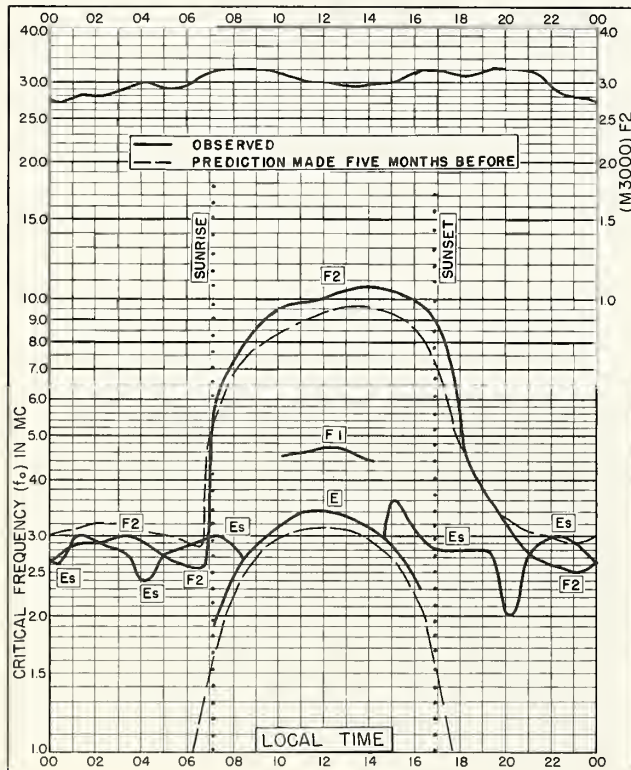


Fig. 75. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E
JUNE 1956

NBS 503

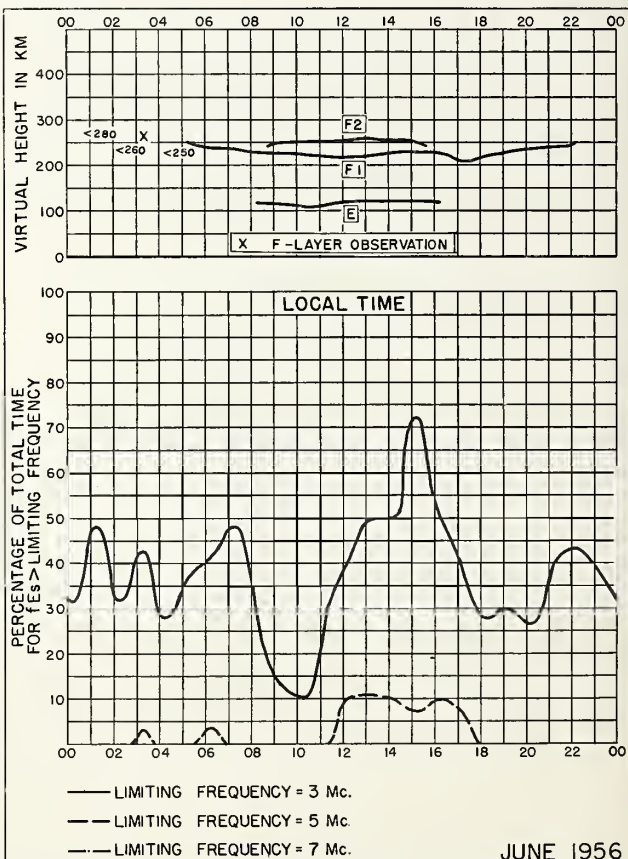


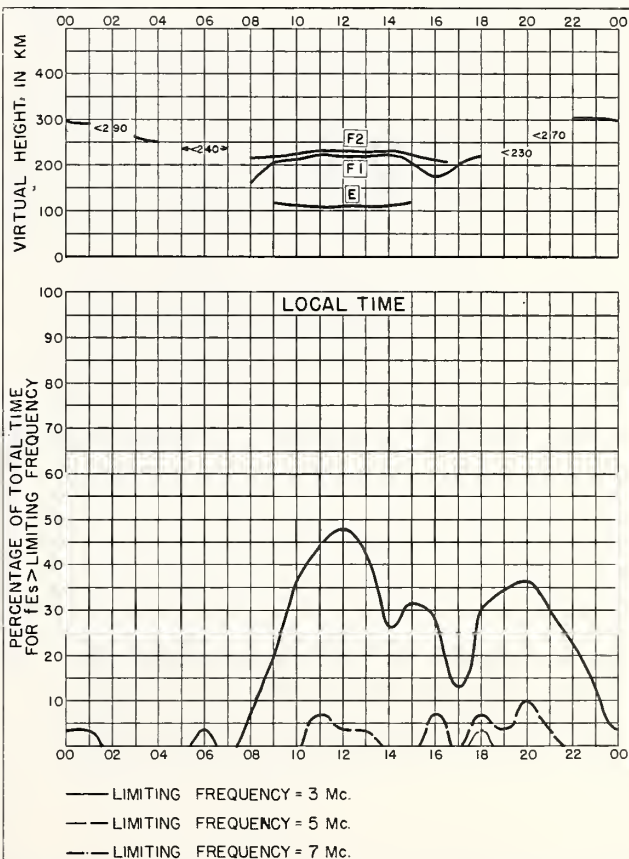
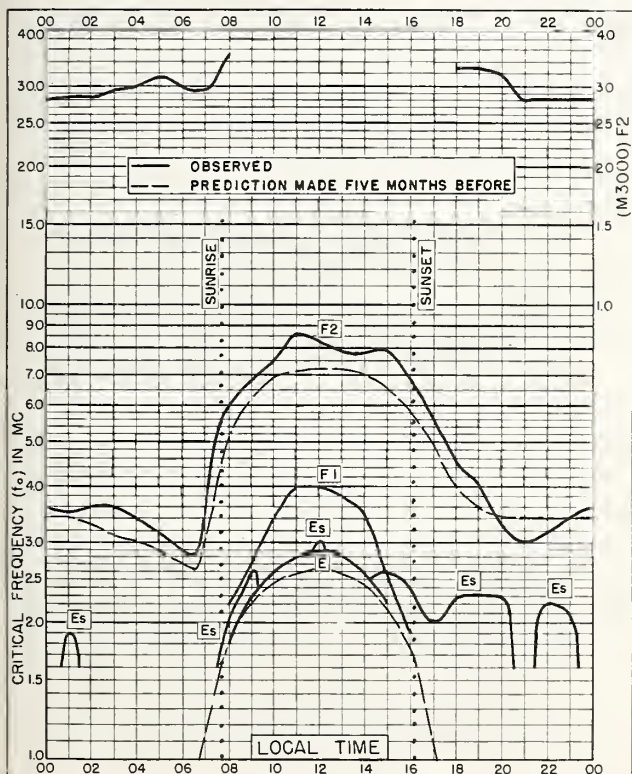
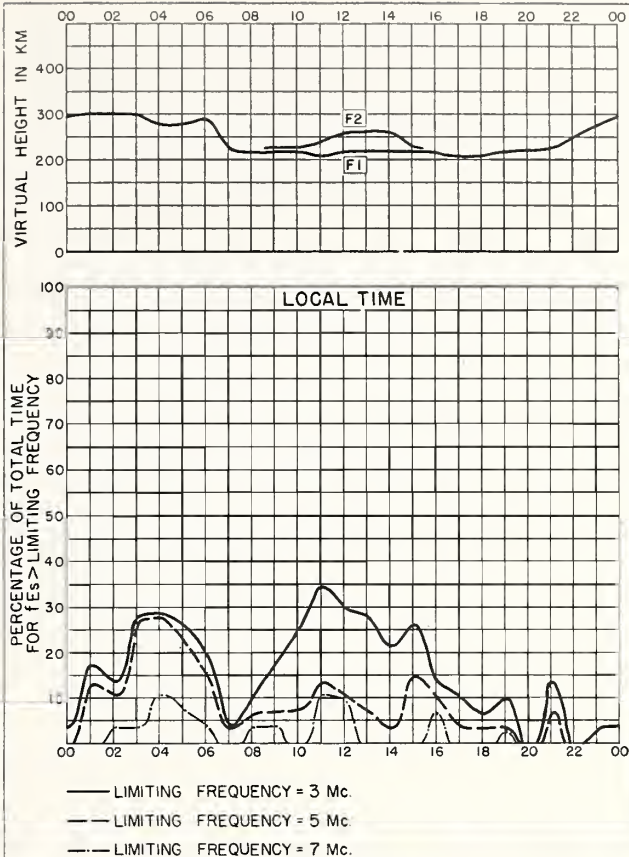
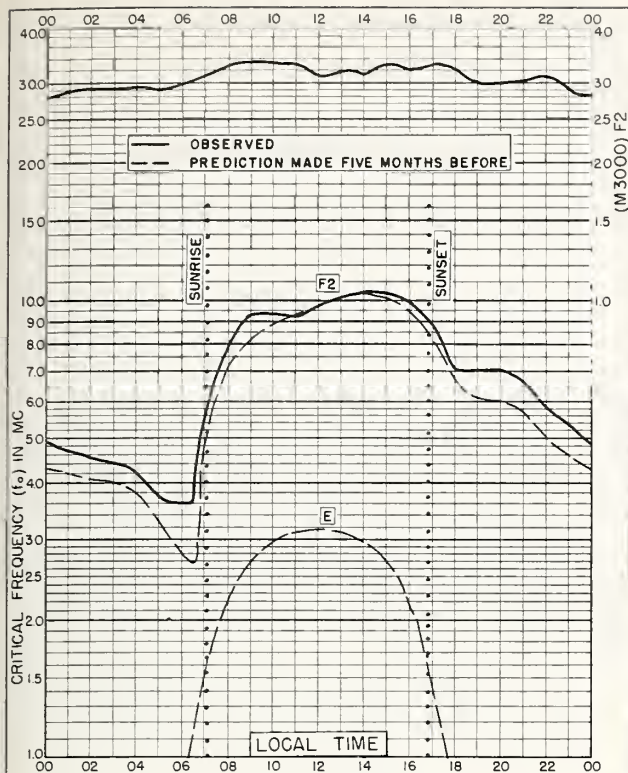
Fig. 76. CAPETOWN, UNION OF S. AFRICA

JUNE 1956

— LIMITING FREQUENCY = 3 Mc.
— LIMITING FREQUENCY = 5 Mc.
— LIMITING FREQUENCY = 7 Mc.

NBS 490

NBS 507



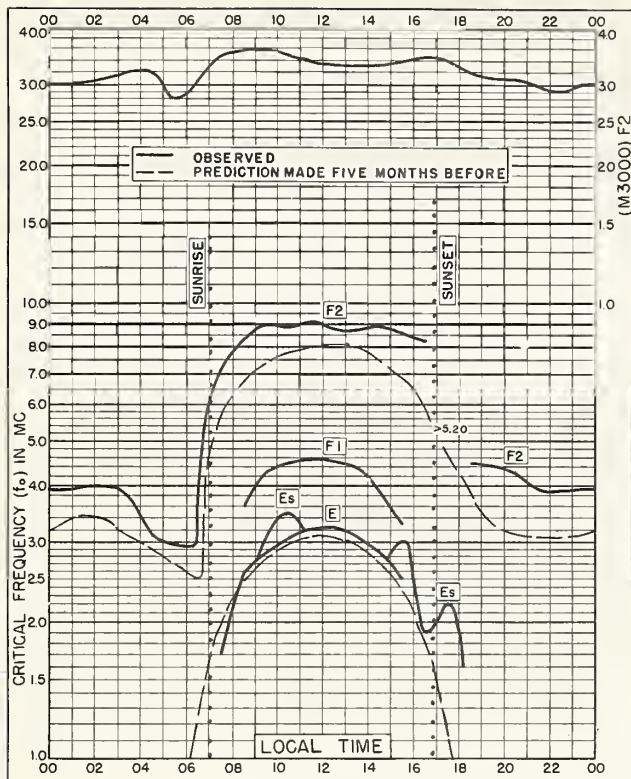


Fig. 81. CASABLANCA, MOROCCO
33.6°N, 7.6°W DECEMBER 1955

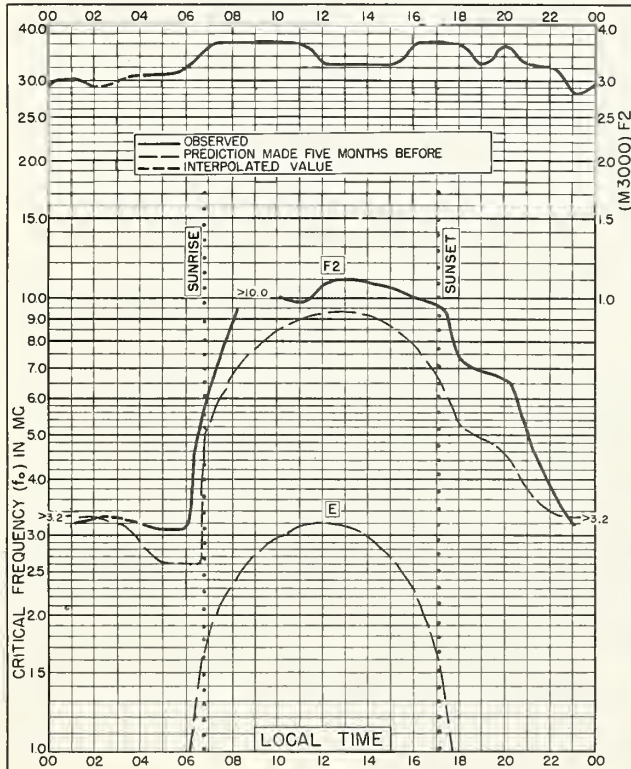


Fig. 83. DELHI, INDIA
28.6°N, 77.1°E DECEMBER 1955

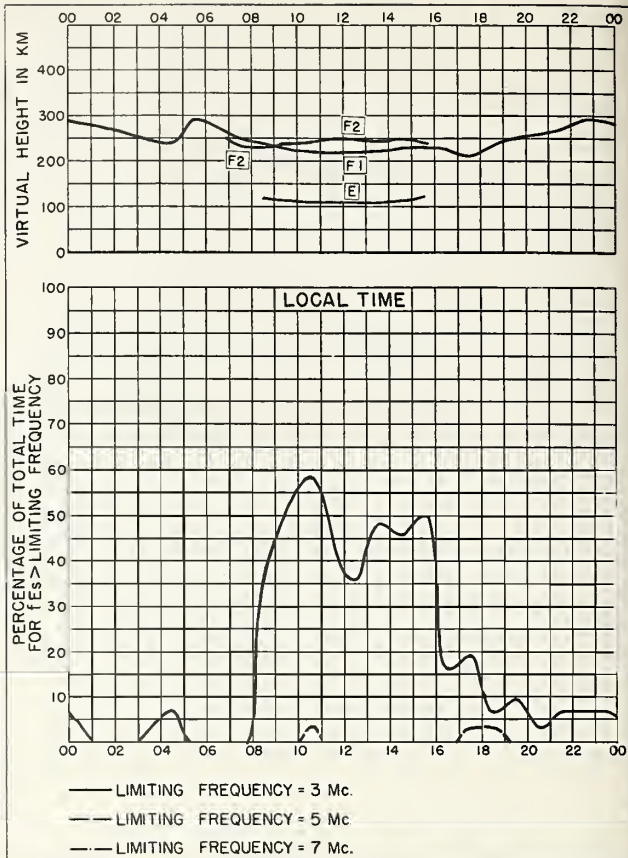


Fig. 82. CASABLANCA, MOROCCO DECEMBER 1955

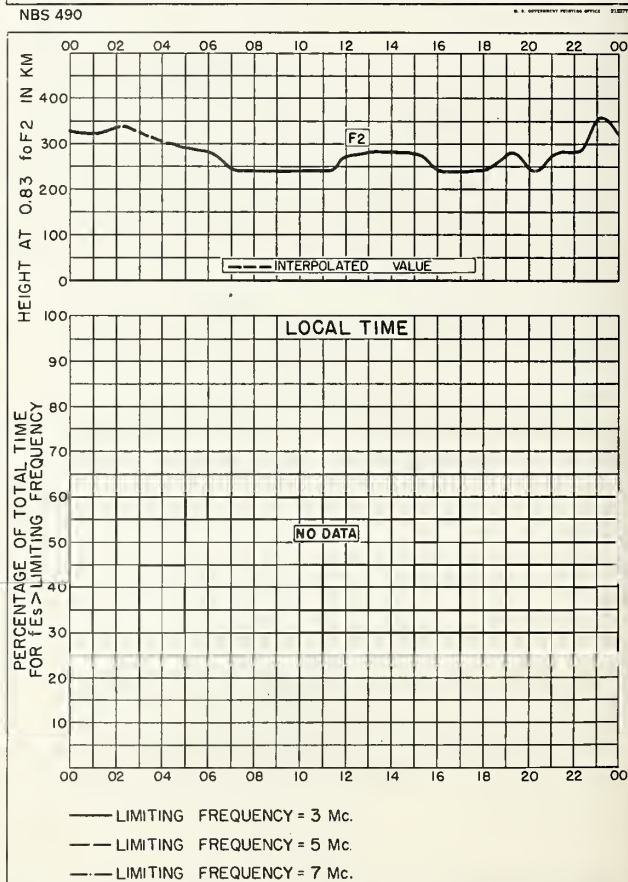
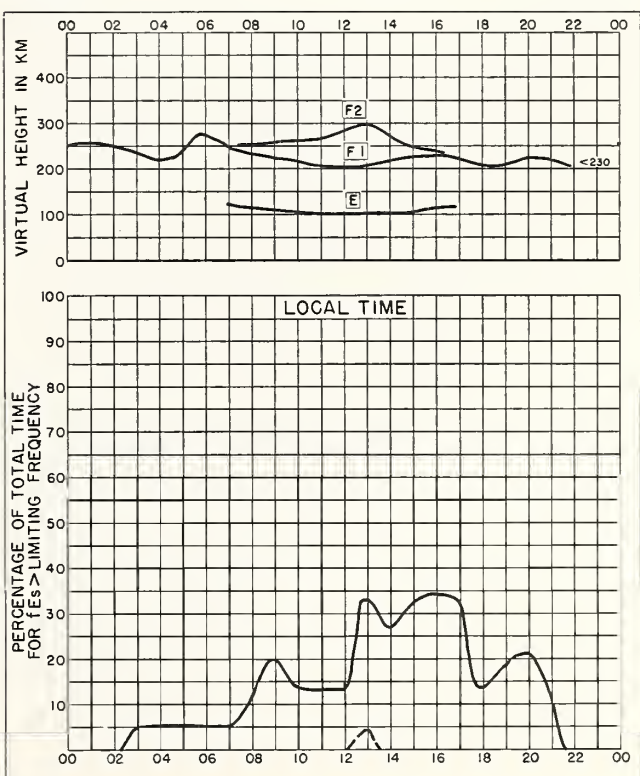
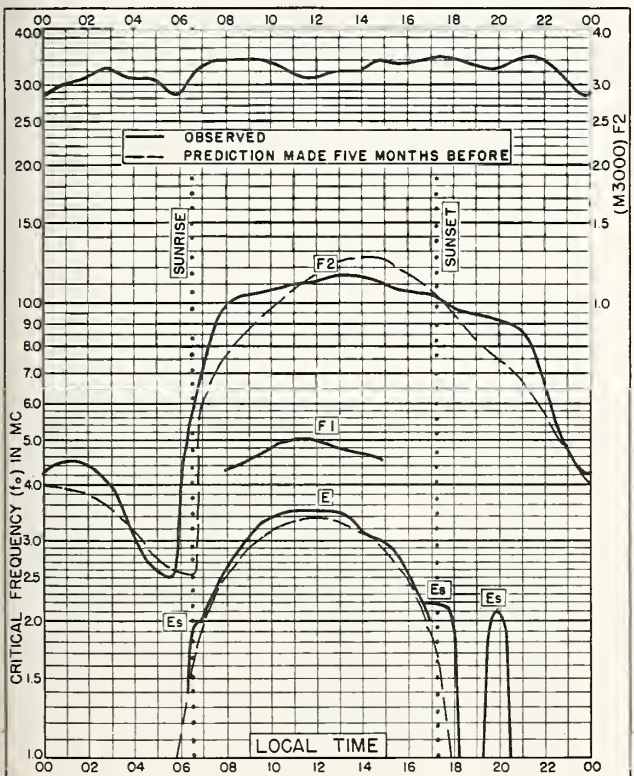
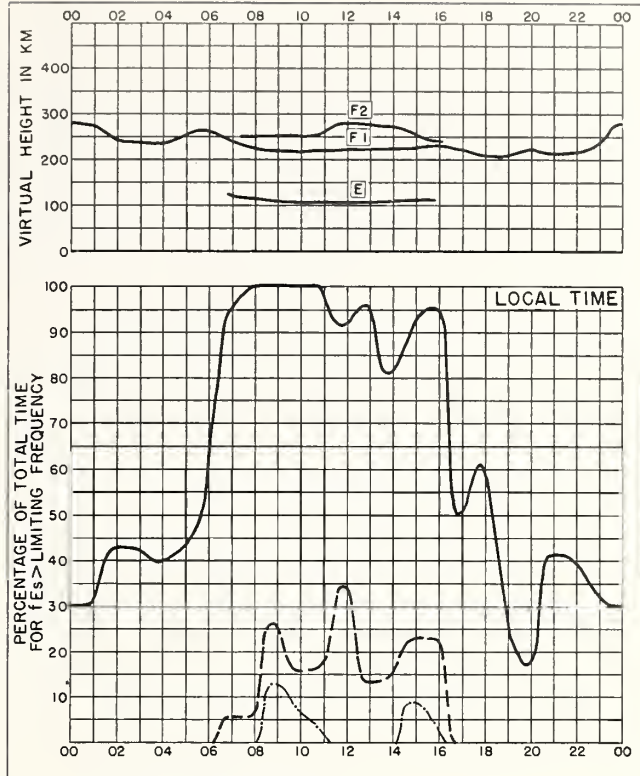
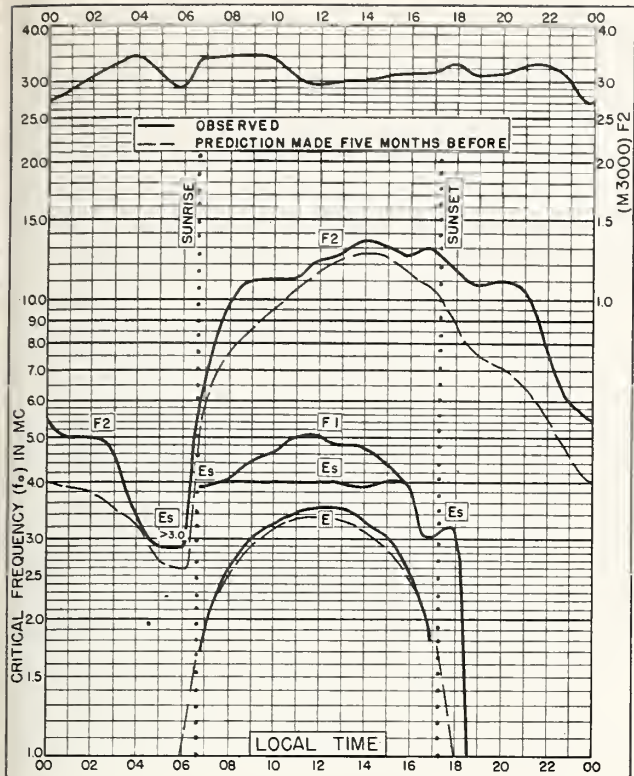


Fig. 84. DELHI, INDIA DECEMBER 1955



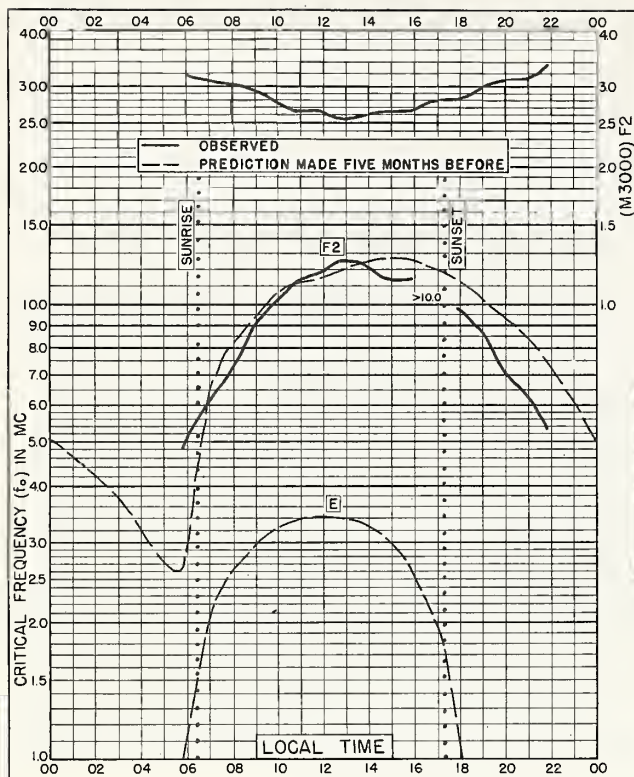


Fig. 89. BOMBAY, INDIA
19.0°N, 73.0°E

DECEMBER 1955

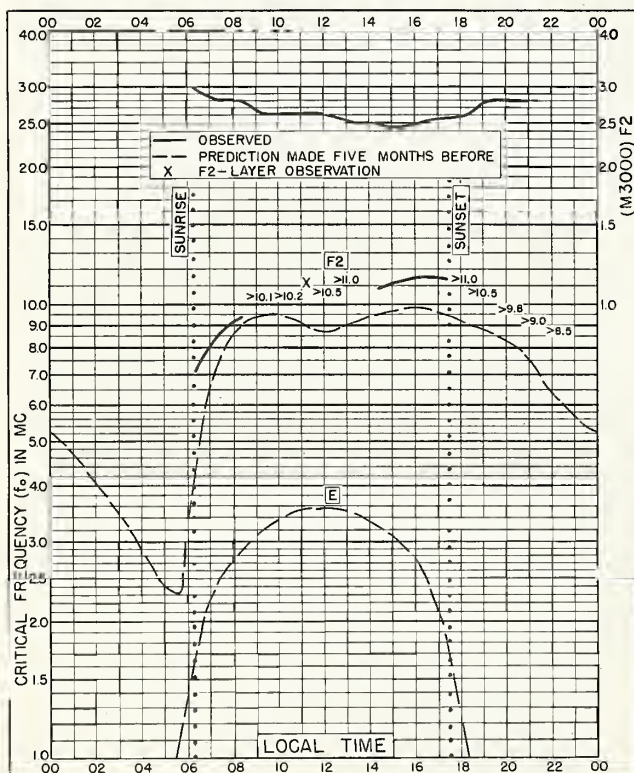


Fig. 91. MADRAS, INDIA
13.0°N, 80.2°E

DECEMBER 1955

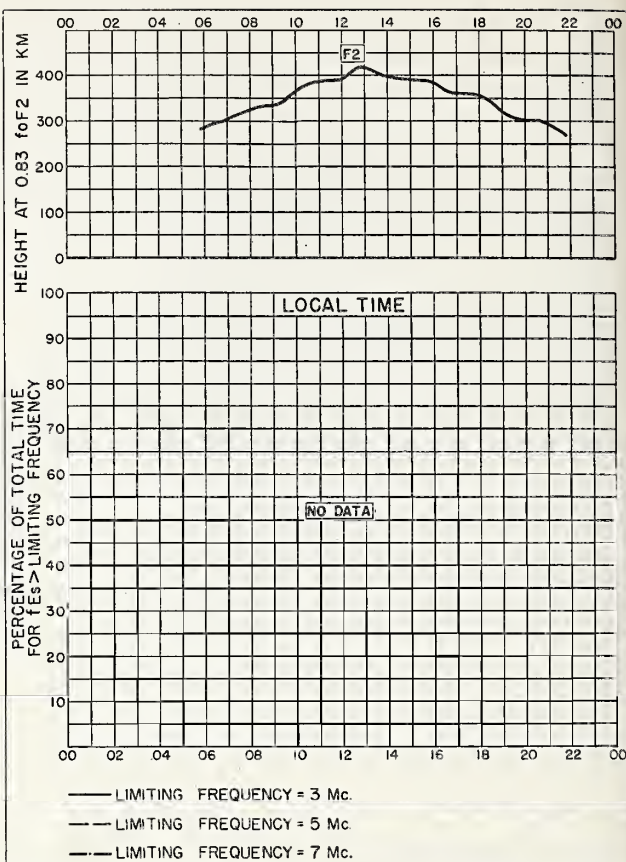


Fig. 90. BOMBAY, INDIA

DECEMBER 1955

NBS 490

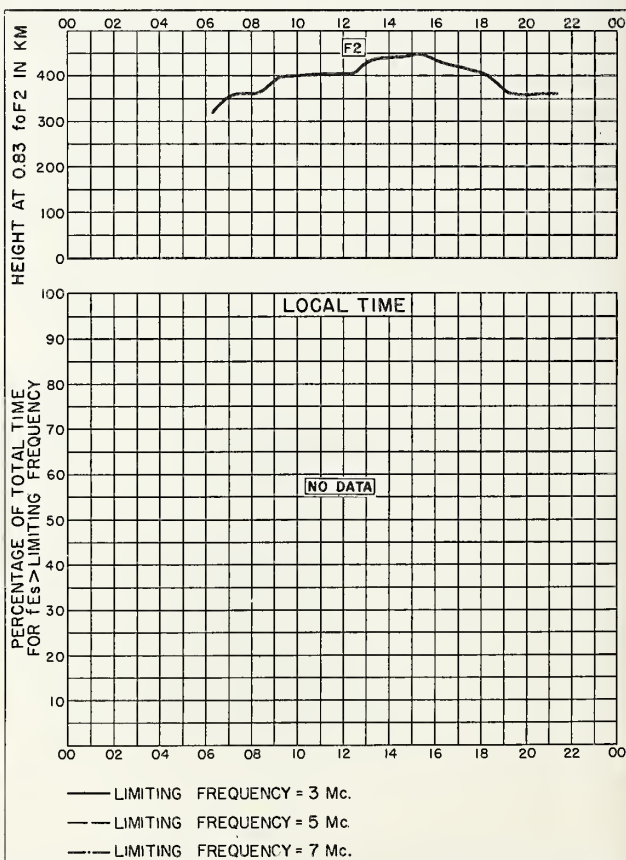


Fig. 92. MADRAS, INDIA

DECEMBER 1955

NBS 490

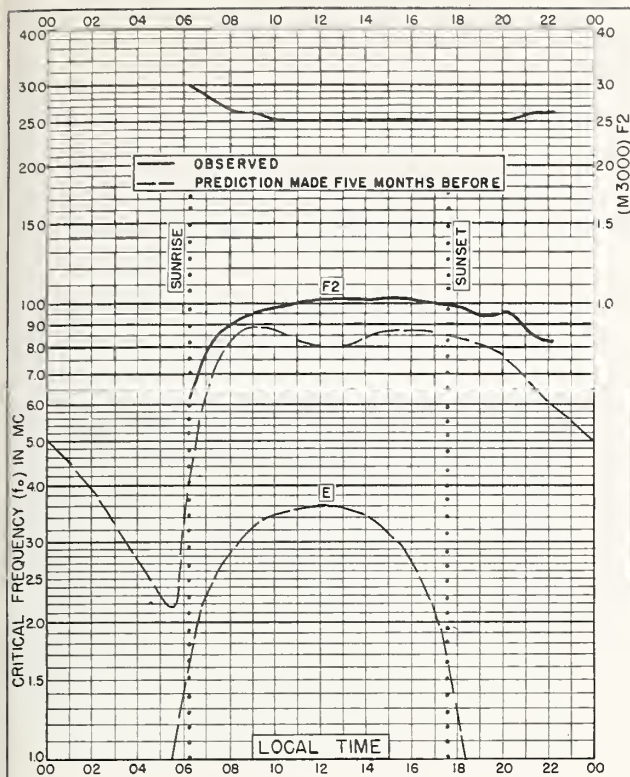


Fig. 93. TIRUCHY, INDIA
10.8°N, 78.8°E DECEMBER 1955

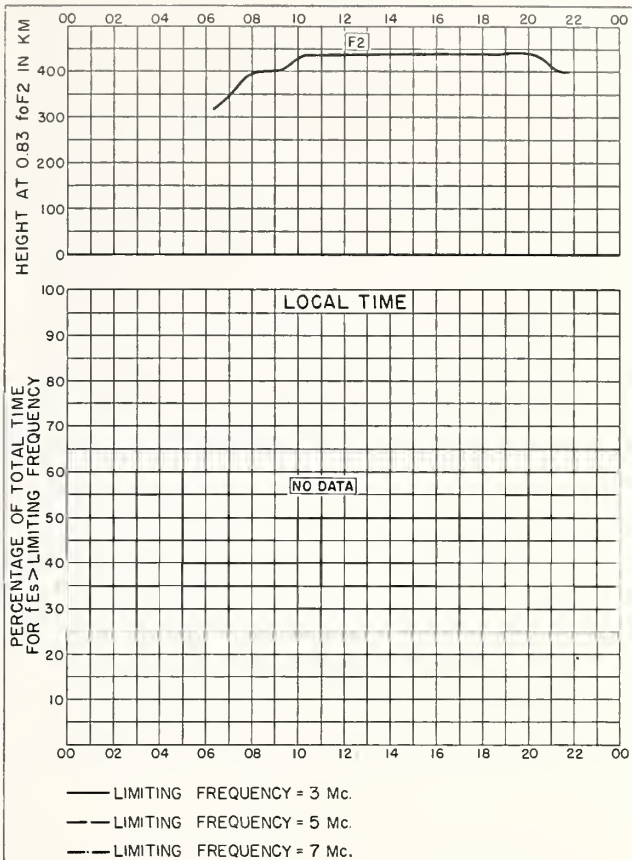


Fig. 94. TIRUCHY, INDIA DECEMBER 1955

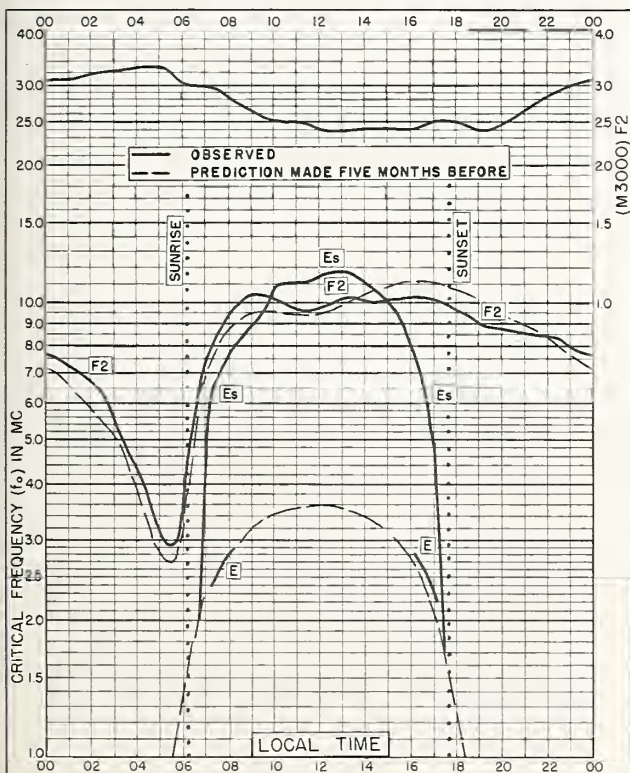


Fig. 95. KODAIKANAL, INDIA
10.2°N, 77.5°E DECEMBER 1955

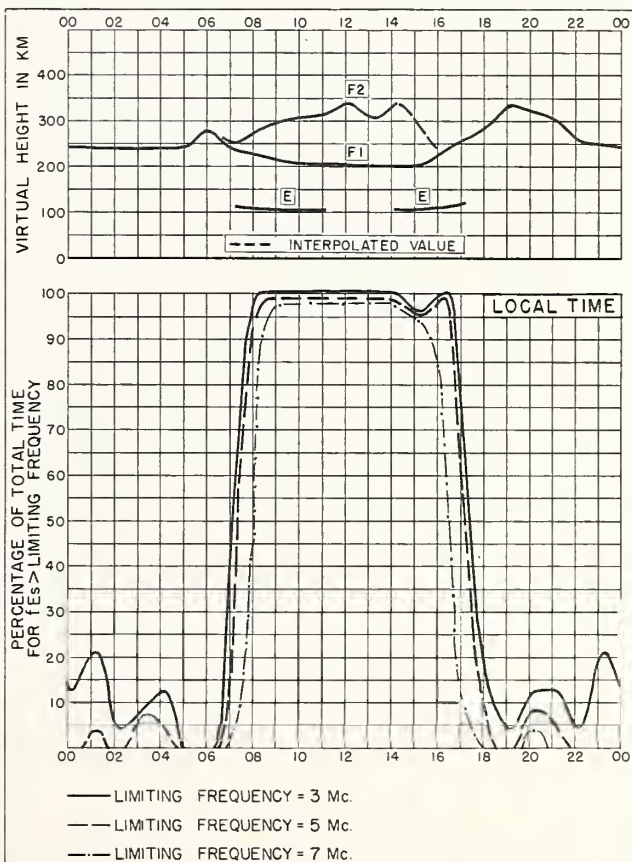


Fig. 96. KODAIKANAL, INDIA DECEMBER 1955

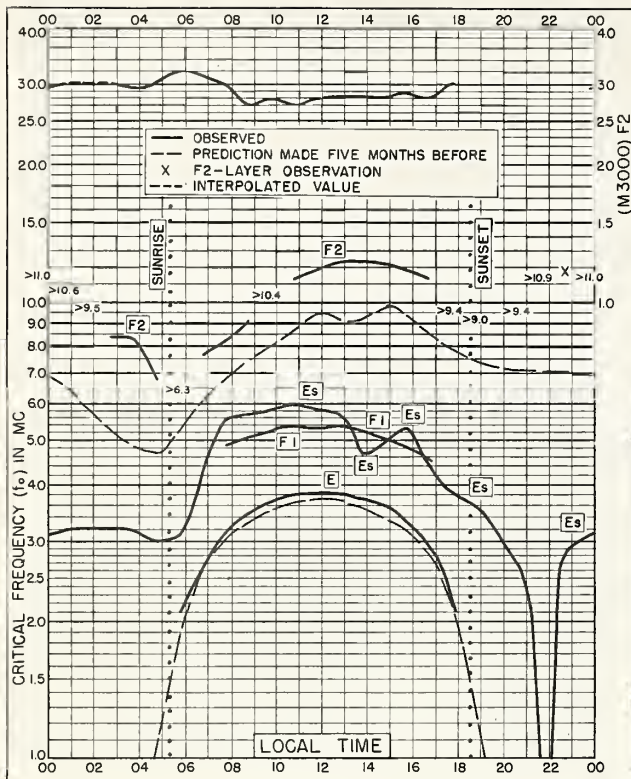


Fig. 97. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E DECEMBER 1955

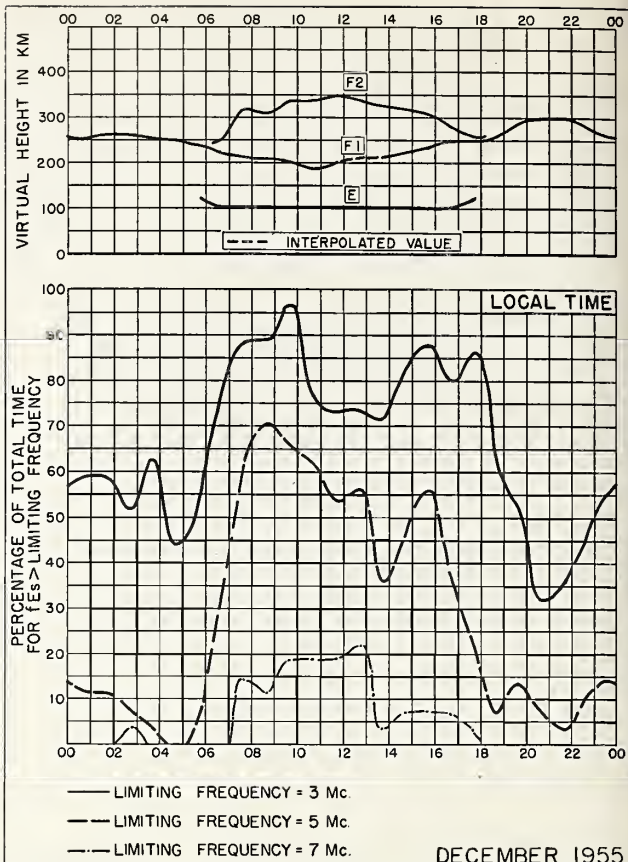


Fig. 98. TOWNSVILLE, AUSTRALIA

NBS 490

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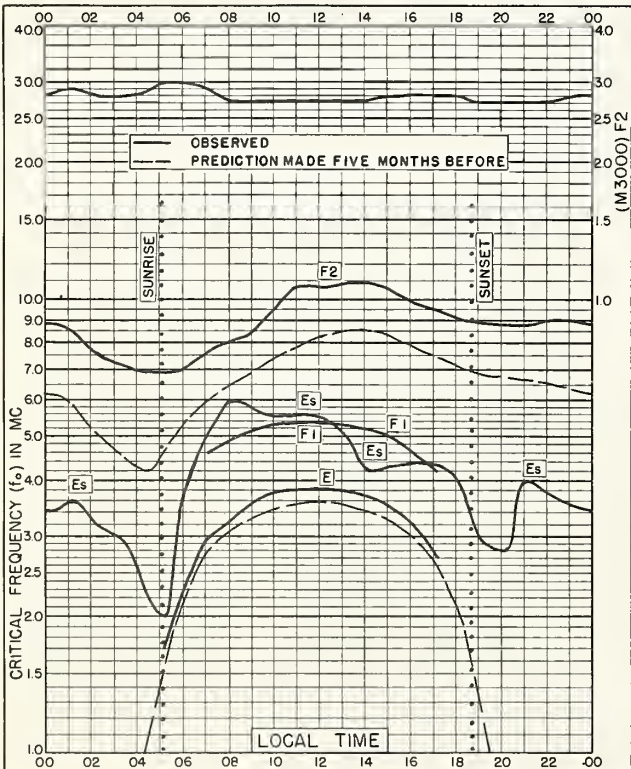


Fig. 99. BRISBANE, AUSTRALIA
27.5°S, 153.0°E DECEMBER 1955

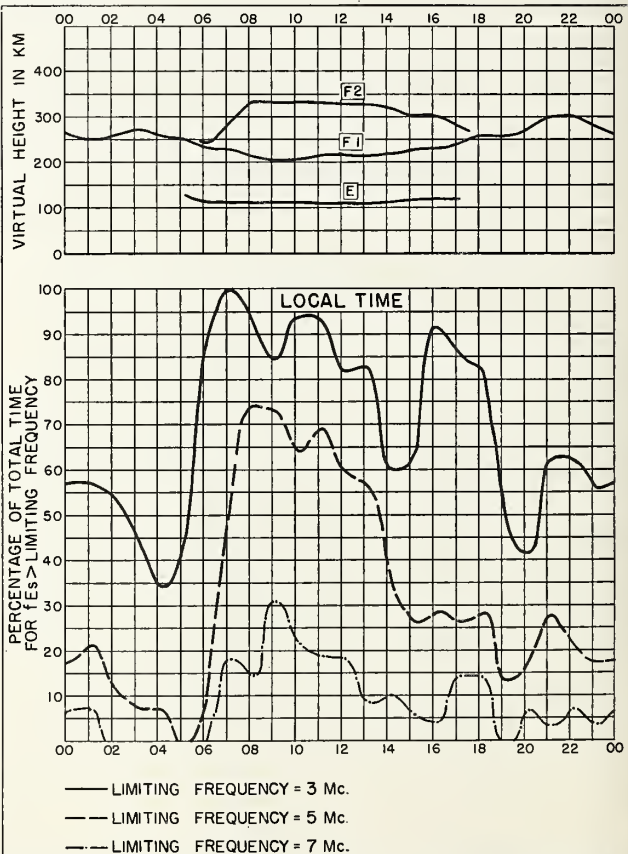


Fig. 100. BRISBANE, AUSTRALIA DECEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 13-5877

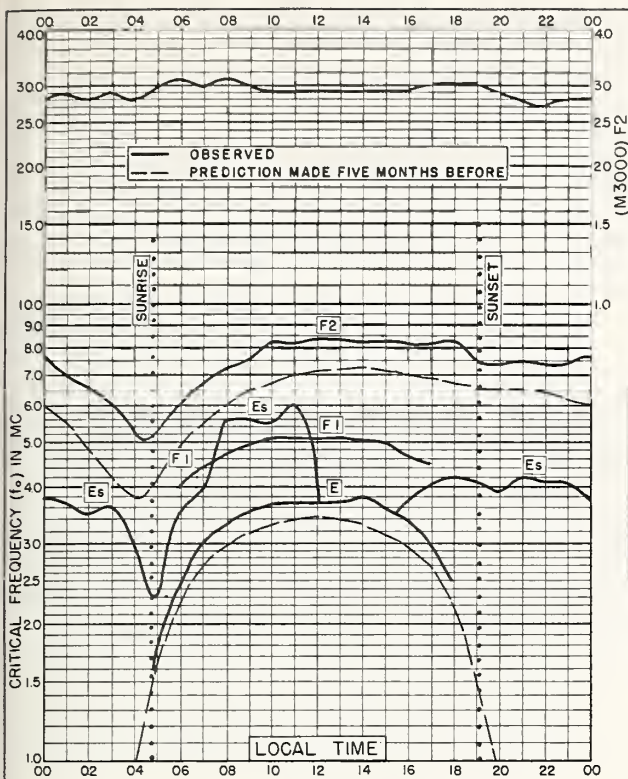


Fig. 101. CANBERRA, AUSTRALIA
35.3°S, 149.0°E DECEMBER 1955

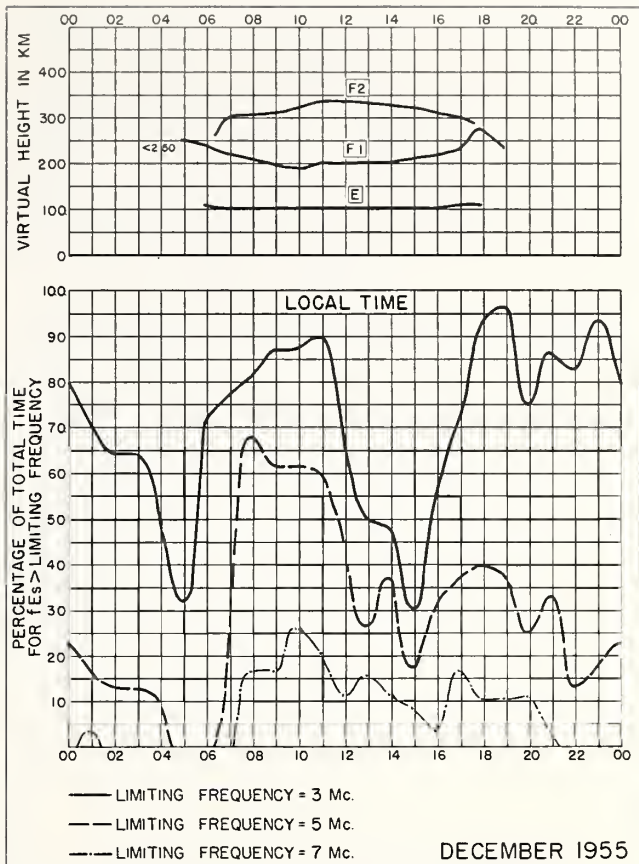


Fig. 102. CANBERRA, AUSTRALIA

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 313077

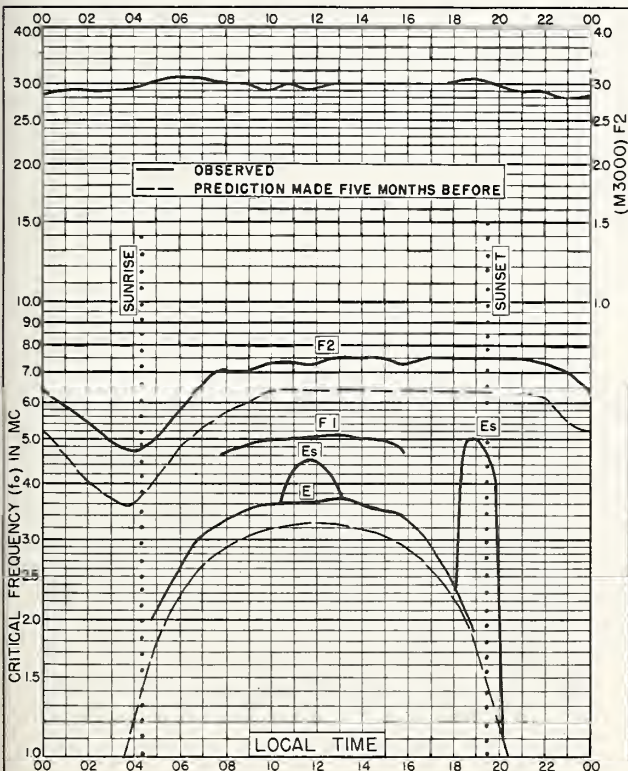


Fig. 103. HOBART, TASMANIA
42.9°S, 147.3°E DECEMBER 1955

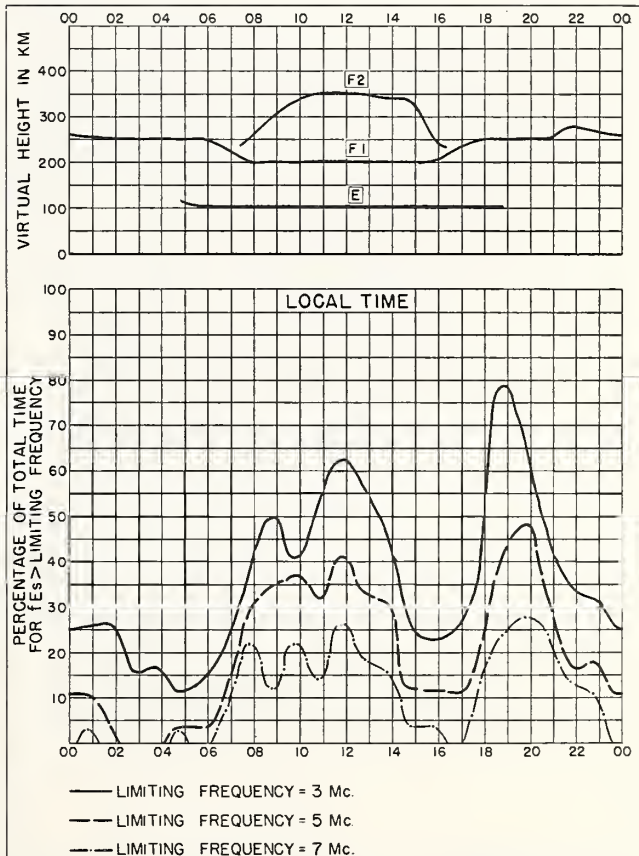


Fig. 104. HOBART, TASMANIA DECEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE 313077

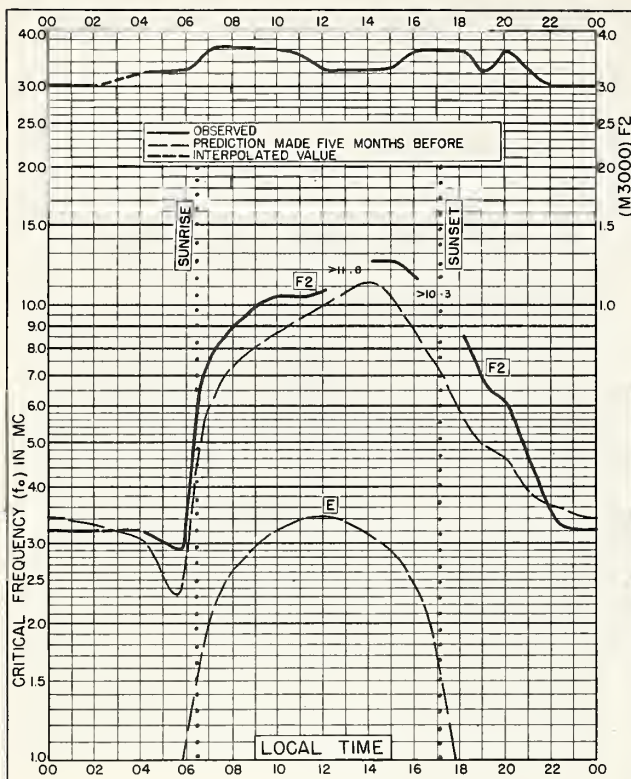
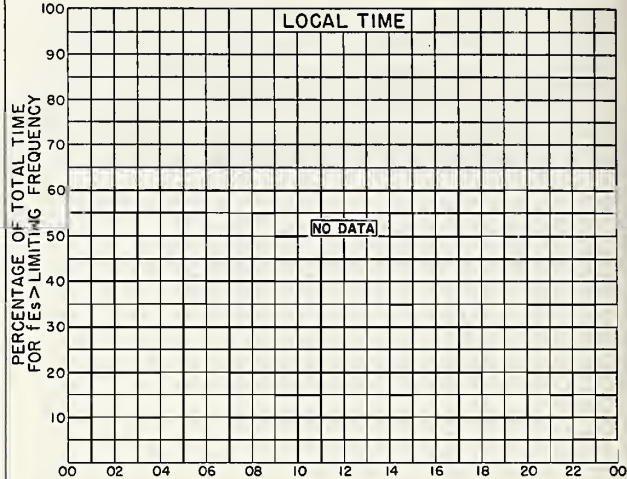
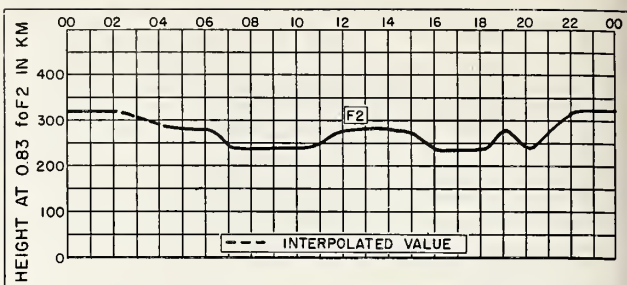


Fig. 105. DELHI, INDIA

28.6°N, 77.1°E

NOVEMBER 1955



— LIMITING FREQUENCY = 3 Mc.

— LIMITING FREQUENCY = 5 Mc.

— LIMITING FREQUENCY = 7 Mc.

Fig. 106. DELHI, INDIA

NOVEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

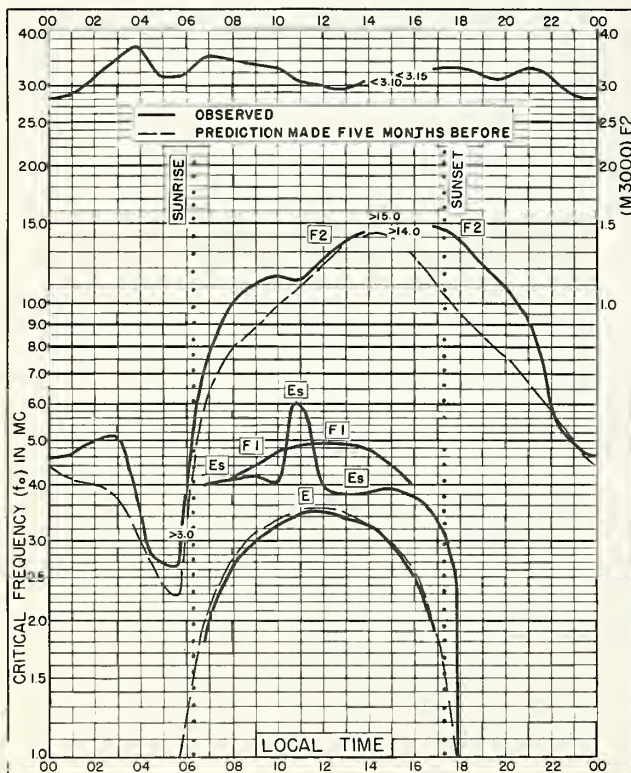
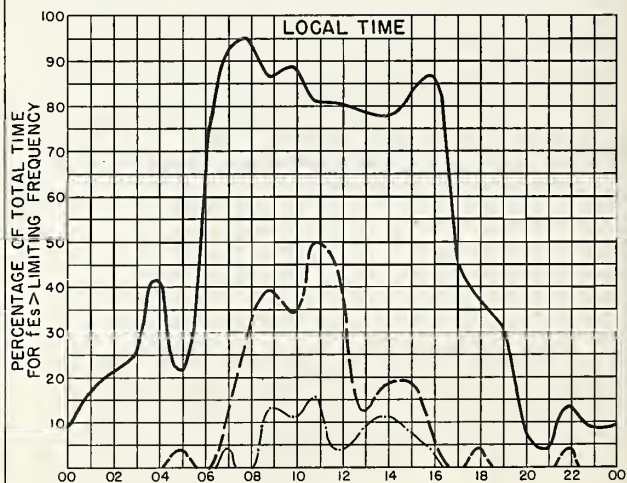
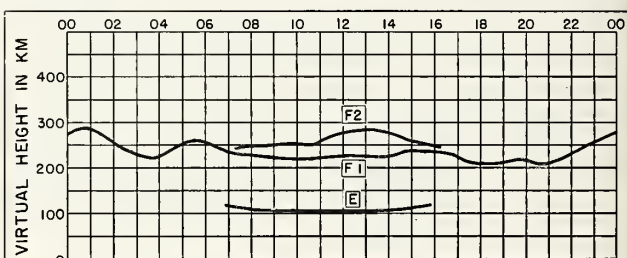


Fig. 107. AHMEDABAD, INDIA

23.0°N, 72.6°E

NOVEMBER 1955



— LIMITING FREQUENCY = 3 Mc.

— LIMITING FREQUENCY = 5 Mc.

— LIMITING FREQUENCY = 7 Mc.

Fig. 108. AHMEDABAD, INDIA

NOVEMBER 1955

NBS 490

U. S. GOVERNMENT PRINTING OFFICE: 1957

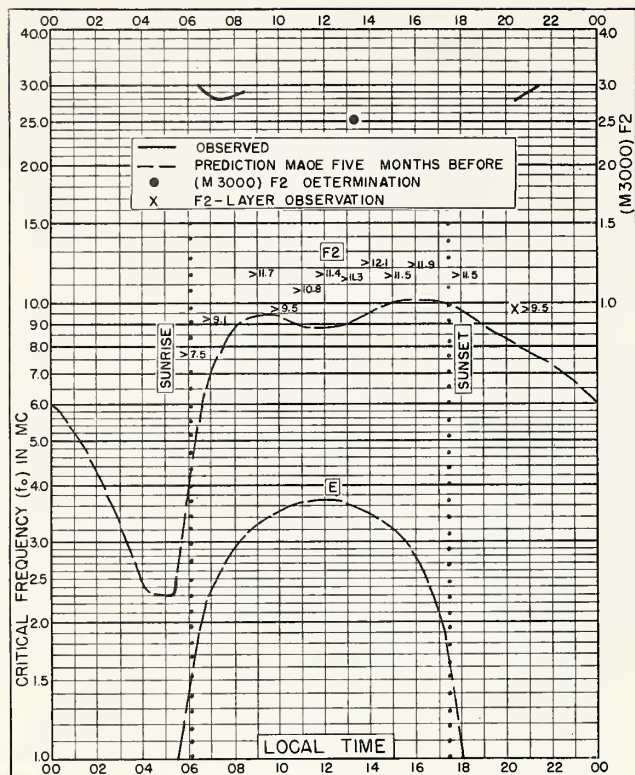


Fig. 113. MADRAS, INDIA
13.0°N, 80.2°E NOVEMBER 1955

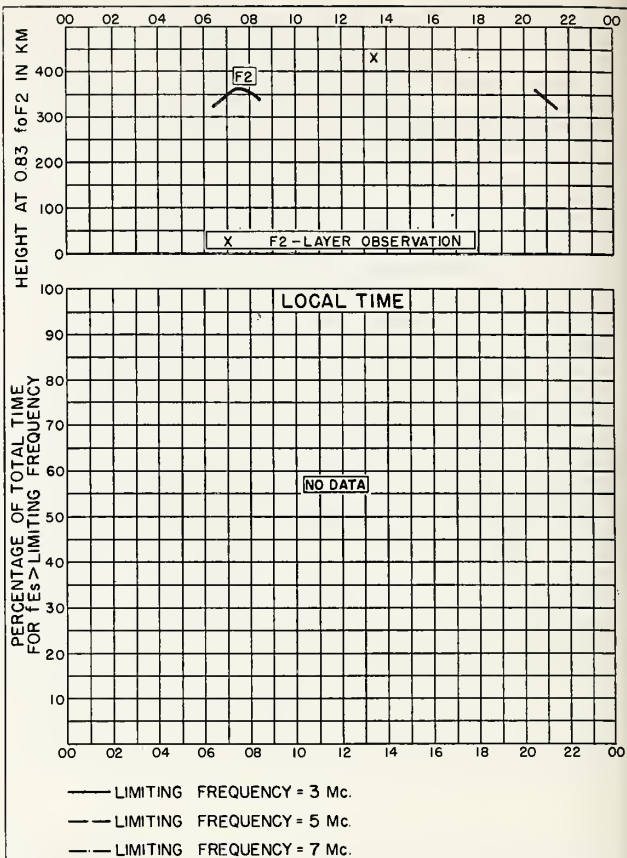


Fig. 114. MADRAS, INDIA NOVEMBER 1955

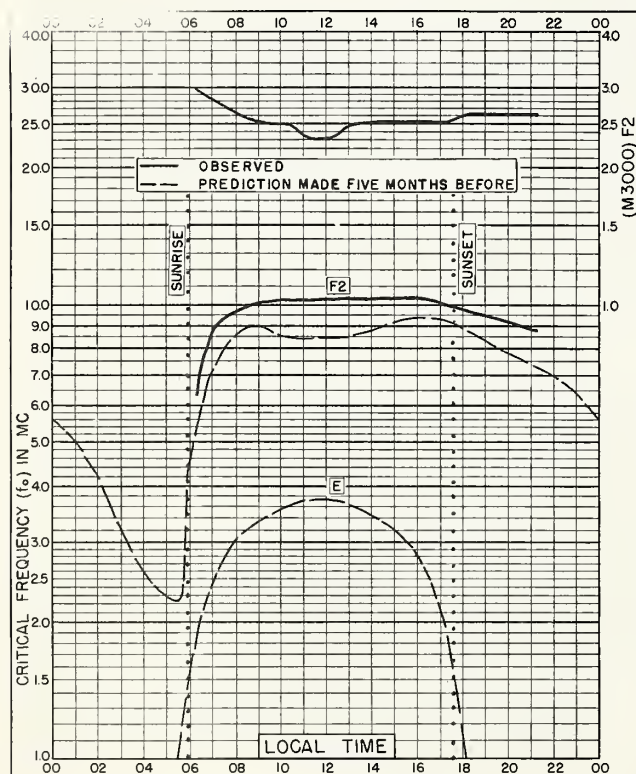


Fig. 115. TIRUCHY, INDIA
10.8°N, 78.8°E NOVEMBER 1955

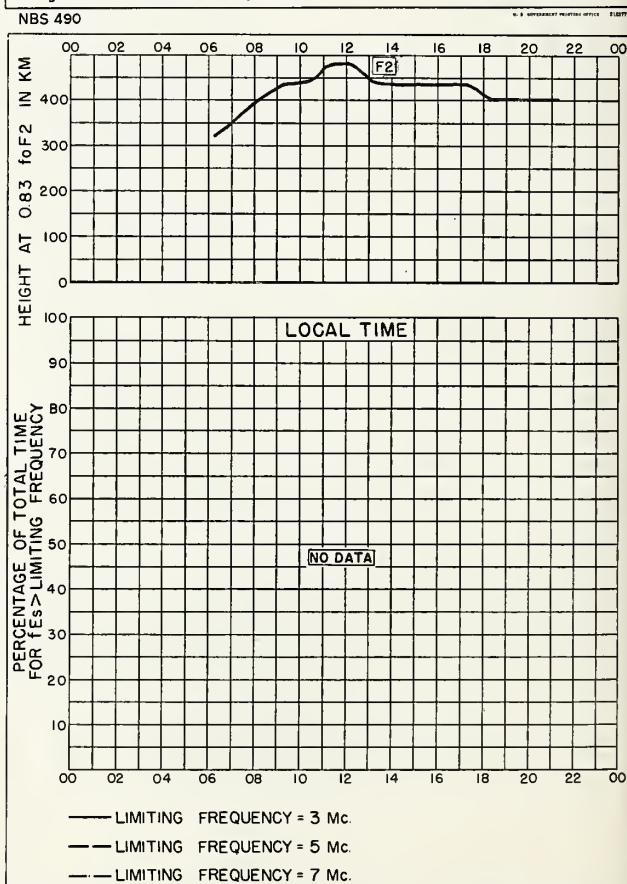
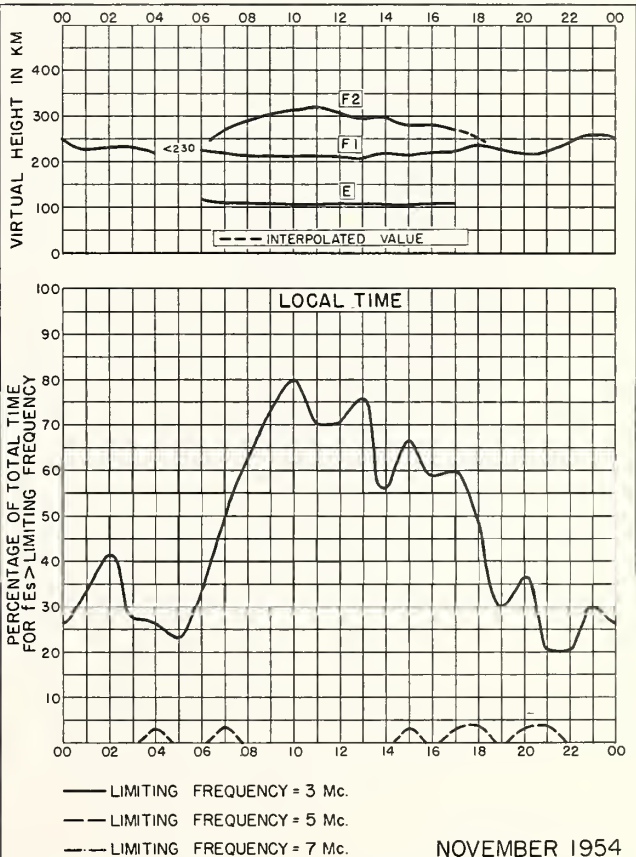
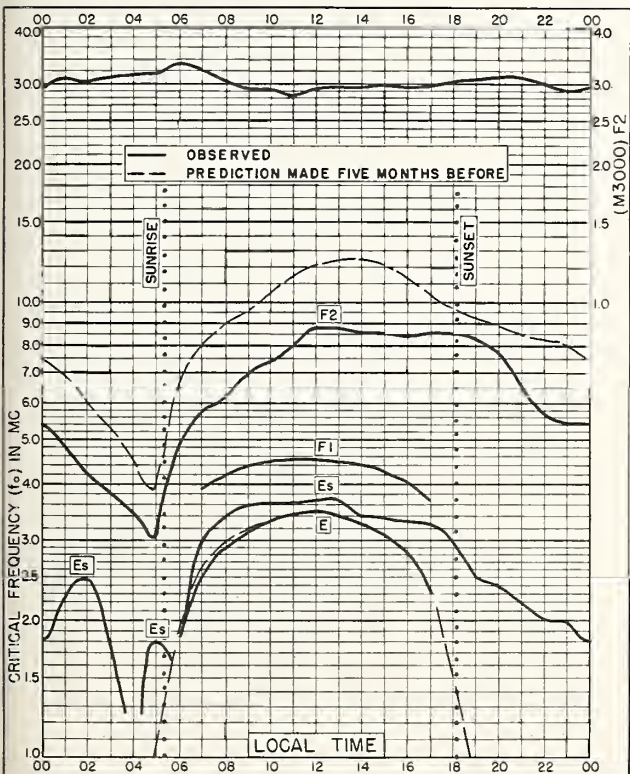
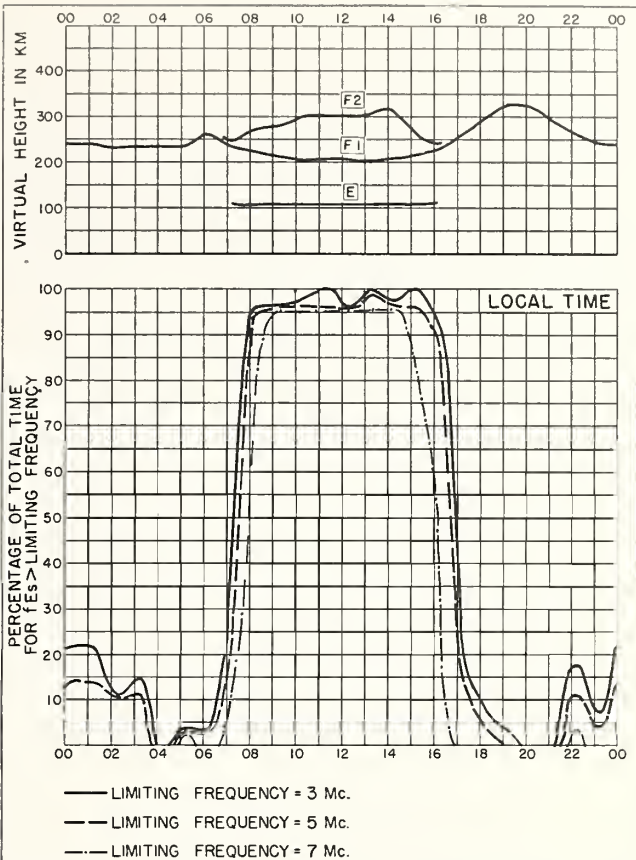
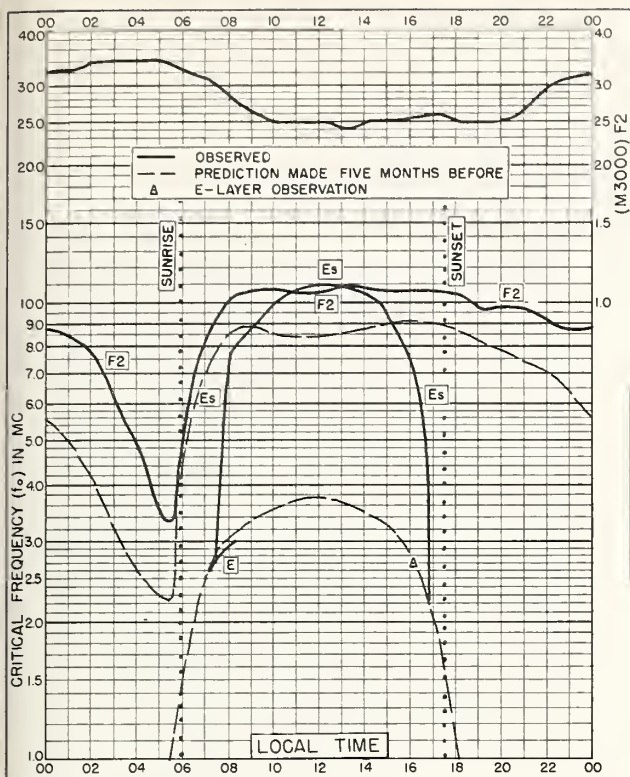


Fig. 116. TIRUCHY, INDIA NOVEMBER 1955



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